

[Submitting Counsel on Signature Page]

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF MARYLAND

BOARD OF EDUCATION OF HOWARD  
COUNTY

Plaintiff,

v.

META PLATFORMS, INC., FACEBOOK  
PAYMENTS, INC., SICULUS, INC.,  
FACEBOOK OPERATIONS, LLC,  
INSTAGRAM, LLC, SNAP INC.,  
TIKTOK INC., TIKTOK, LTD., TIKTOK,  
LLC, BYTEDANCE LTD., BYTEDANCE  
INC., GOOGLE LLC, and YOUTUBE,  
LLC,

Defendants.

Civil Case No. \_\_\_\_\_

**COMPLAINT**

**JURY TRIAL DEMANDED**

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## 1 I. INTRODUCTION

2 1. American children are suffering an unprecedented mental health crisis fueled by  
 3 Defendants’ addictive and dangerous social media products. In the past decade, Americans’  
 4 engagement with social media grew exponentially, nowhere more dramatically than among our  
 5 country’s youth. That explosion in usage is no accident. It is the result of Defendants’ studied  
 6 efforts to induce young people to compulsively use their products—Instagram, Facebook,  
 7 TikTok, Snapchat, and YouTube. And Defendants have grown not just their user bases, but the  
 8 frequency with which users use their platforms and the time each user spends on their platforms.  
 9 Defendants’ growth is a product of choices they made to design and operate their platforms in  
 10 ways that exploit the psychology and neurophysiology of their users into spending more and more  
 11 time on their platforms. These techniques are both particularly effective and harmful young users.  
 12 Defendants have intentionally cultivated, creating a mental health crisis among America’s youth.

13 2. Defendants have done so for profit. Adolescents and children are central to the  
 14 Defendants’ business models. These age groups are highly connected to the Internet, more likely  
 15 to have social media accounts, and more likely to devote their downtime to social media usage.  
 16 Additionally, youth influence the behavior of their parents and younger siblings. As one Defendant  
 17 put it, “los[ing] the teen foothold in the U.S.” would mean “los[ing] the pipeline” for growth.<sup>1</sup>

18 3. Over the past decade, Defendants have relentlessly pursued a strategy of growth-at-  
 19 all-costs, recklessly ignoring the impact of their products on children’s mental and physical health  
 20 and well-being. In a race to corner the “valuable but untapped” market of tween and teen users,  
 21 each Defendant designed product features to promote repetitive, uncontrollable use by kids.<sup>2</sup>

22 4. Recognizing the power of engaging young users, Defendants deliberately tweaked  
 23 the design and operation of their apps to exploit the psychology and neurophysiology of kids.  
 24 Because children’s and adolescents’ brains are not fully developed, they lack the same emotional

25  
 26 <sup>1</sup> Sheera Frenkel et al., *Instagram Struggles with Fears of Losing Its ‘Pipeline’: Young Users*,  
 N.Y. Times (Oct. 26, 2021), available at  
 27 <https://www.nytimes.com/2021/10/16/technology/instagram-teens.html>.

28 <sup>2</sup> Georgia Wells & Jeff Horwitz, *Facebook’s Effort to Attract Preteens Goes Beyond Instagram Kids, Documents Show*, Wall St. J. (Sept. 28, 2021), <https://www.wsj.com/articles/facebook-instagram-kids-tweens-attract-11632849667>.

1 maturity, impulse control, and psychological resiliency as adults. As a result, they are uniquely  
2 susceptible to addictive features in digital products and highly vulnerable to the consequent harms.  
3 Knowing this, Defendants wrote code designed to manipulate dopamine release in children's  
4 developing brains and, in doing so, create compulsive use of their apps.

5 5. Defendants' strategy paid off. Users of their products now number in the billions,  
6 and the frequency and time spent by these users has grown exponentially.

7 6. Yet, Defendants' growth has come at the expense of its most vulnerable users:  
8 children and teens around the world who they cultivated and exploited. Children and teens are the  
9 direct victims of the intentional product design choices made by each Defendant. They are the  
10 intended targets of the harmful features that pushed them into self-destructive feedback loops

11 7. Today, over a third of 13- to 17-year-old kids report using one of Defendants' apps  
12 "almost constantly" and admit this is "too much." Yet more than half of these kids report that they  
13 would struggle to cut back on their social media use. Instead of feeding coins into machines, kids  
14 are feeding Defendants' platforms with an endless supply of attention, time, and data.

15 8. Defendants' choices have generated extraordinary corporate profits—and yielded  
16 immense tragedy. Suicide rates for youth are up an alarming 57%. Emergency room visits for  
17 anxiety disorders are up 117%. In the decade leading up to 2020, there was a 40% increase in high  
18 school students reporting persistent sadness and hopelessness, and a 36% increase in those who  
19 attempted to take their own lives. In 2019, one in five high school girls had made a suicide plan. In  
20 2021, one in three girls seriously considered attempting suicide. Children and their parents and  
21 guardians across the country have struggled to cope with the severe, lasting damage visited on their  
22 families by anxiety, depression, addiction, eating disorders, self-harm, suicidality, and the loss of  
23 outliving one's child.

24 9. Instagram, Facebook, TikTok, Snapchat, and YouTube have rewired how our kids  
25 think, feel, and behave. Disconnected "Likes" have replaced the intimacy of adolescent friendships.  
26 Mindless scrolling has displaced the creativity of play and sport. While presented as "social,"  
27 Defendants' products have in myriad ways promoted disconnection, disassociation, and a legion of  
28 resulting mental and physical harms.

1           10.     The U.S. Surgeon General recently explained that children versus Big Tech is “just  
2 not a fair fight.”<sup>3</sup> “You have some of the best designers and product developers in the world who  
3 have designed these products to make sure people are maximizing the amount of time they spend  
4 on these platforms. And if we tell a child, use the force of your willpower to control how much  
5 time you’re spending, you’re pitting a child against the world’s greatest product designers.”

6           11.     The Surgeon General’s comments have since been echoed by President Biden  
7 himself. In a January 11, 2023 op-ed, President Biden recognized: “The risks Big Tech poses for  
8 ordinary Americans are clear. Big Tech companies collect huge amounts of data on the things we  
9 buy, on the websites we visit, on the places we go and, most troubling of all, on our children.”<sup>4</sup>

10          12.     Students experiencing anxiety, depression, and other mental health issues perform  
11 worse in school, are less likely to attend school, more likely to engage in substance use, and to act  
12 out, all of which directly affects Plaintiff’s ability to fulfill its educational mission.

13          13.     Plaintiff, like many school districts across the state and country, is at a breaking  
14 point. Meanwhile, Defendants profit tremendously from their wrongful conduct. Plaintiff brings  
15 this action to remedy this wrong, hold Defendants accountable, and achieve comprehensive, long-  
16 term planning and funding to drive sustained reduction in the mental health crises its students  
17 experience at the Defendants’ hands.

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24  
25           <sup>3</sup> Allison Gordon & Pamela Brown, *Surgeon General says 13 is ‘too early’ to join social media*,  
26 CNN (Jan. 29, 2023), <https://www.cnn.com/2023/01/29/health/surgeon-general-social-media/index.html>. Exhibits and referenced materials are incorporated in this *Master Complaint* as  
27 if fully stated herein.

28           <sup>4</sup> Joe Biden, *Republicans and Democrats, Unite Against Big Tech Abuses*, Wall St. J. (Jan. 11, 2023), <https://www.wsj.com/articles/unite-against-big-tech-abuses-social-media-privacy-competition-antitrust-children-algorithm-11673439411>.



**II. THE PARTIES**

**A. PLAINTIFF**

14. Plaintiff Board of Education of Howard County (“Howard County Public Schools” or “School Board” or “Plaintiff”), pursuant to Md. Code Anny., Educ. Article §§ 3-103 – 3-104, is the corporate entity that operates the Howard County Public School System (“HCPSS”) and has the power to sue and be sued under Maryland law. Plaintiff’s offices are located at 10910 Clarksville Pike, Ellicott City, Maryland 21042.

**B. DEFENDANTS**

15. The defendants identified in this section are collectively referred to as “Defendants” throughout this Complaint.

**1. Meta**

16. Defendant Meta Platforms, Inc. (“Meta Platforms”) is a Delaware corporation and multinational technology conglomerate. Its principal place of business is in Menlo Park, CA.

17. Meta Platforms’ subsidiaries include, but may not be limited to, the entities identified in this section, as well as a dozen others whose identity or involvement is presently unclear.

18. Defendant Facebook Payments, Inc. (“Facebook 1”) is a wholly owned subsidiary of Meta Platforms that was incorporated in Florida on December 10, 2010. Facebook 1 manages, secures, and processes payments made through Meta Platforms, among other activities. Its principal place of business is in Menlo Park, CA.

19. Defendant Siculus, Inc. (“Siculus”) is a wholly owned subsidiary of Meta Platforms that was incorporated in Delaware on October 19, 2011. Siculus constructs data facilities to support Meta Platforms’ products. Its principal place of business is in Menlo Park, CA.

20. Defendant Facebook Operations, LLC (“Facebook 2”) is a wholly owned subsidiary of Meta Platforms that was incorporated in Delaware on January 8, 2012. Facebook 2 is likely a managing entity for Meta Platforms’ other subsidiaries. Meta Platforms is the sole member of this LLC, whose principal place of business is in Menlo Park, CA.

21. Defendant Instagram, LLC (“Instagram, LLC”) launched an app called Instagram in October 2010. On or around April 7, 2012, Meta Platforms purchased Instagram, LLC for over one billion dollars and reincorporated the company in Delaware. Meta Platforms is the sole member of this LLC, whose principal place of business is in Menlo Park, CA.

22. Meta Platforms, Instagram, Siculus, Facebook 1, and Facebook 2 are referred to jointly as “Meta.”

23. Meta owns, operates, controls, produces, designs, maintains, manages, develops, tests, labels, markets, advertises, promotes, supplies, and distributes digital products available through mobile- and web-based applications (“apps”), including Instagram and Facebook (together, “Meta products”); Messenger; and Messenger Kids. Meta’s apps and devices are widely distributed to consumers throughout the United States.

## 2. Snap

24. Defendant Snap Inc. (“Snap”) is a Delaware corporation. Its principal place of business is in Santa Monica, CA.

25. Snap owns, operates, controls, produces, designs, maintains, manages, develops, tests, labels, markets, advertises, promotes, supplies, and distributes the app Snapchat. Snapchat is widely available to consumers throughout the United States.

## 3. ByteDance

26. Defendant ByteDance Ltd. is a global company incorporated in the Cayman Islands. Its principal place of business is in Beijing, China. ByteDance Ltd. also maintains offices in the United States, Singapore, India, and the United Kingdom, among other locations.

27. ByteDance Ltd. wholly owns its subsidiary Defendant ByteDance Inc., a Delaware corporation whose principal place of business is in Mountain View, CA.

28. ByteDance Ltd.’s key Chinese subsidiary is Beijing Douyin Information Service Limited, f/k/a Beijing ByteDance Technology Co. Ltd. (“Beijing ByteDance”).<sup>5</sup> Beijing ByteDance

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<sup>5</sup> See Sophie Webster, *ByteDance Changes Names of Subsidiaries to Douyin, Speculated to be Mulling an IPO*, Tech Times (May 8, 2022), available at <https://www.techtimes.com/articles/275188/20220508/bytedance-changes-names-subsidiaries-douyin-speculated-mulling-ipo.htm>.

owns, operates, and holds key licenses to Douyin, the Chinese version of TikTok. On or around April 30, 2021, the Chinese government took a 1% stake in, and received one of three seats on the board of directors of, Beijing ByteDance.<sup>6</sup> Specifically, 1% of Beijing ByteDance is now owned by WangTouZhongWen (Beijing) Technology, which in turn is owned by China Internet Investment Fund (China's top Internet regulator and censor), China Media Group (China's national broadcaster, controlled by the Chinese Communist Party's propaganda department), and the Beijing municipal government's investment arm.

29. ByteDance Ltd. wholly owns its subsidiary Defendant TikTok, Ltd., a Cayman Island corporation with its principal place of business in Shanghai, China.

30. TikTok, Ltd. wholly owns its subsidiary Defendant TikTok, LLC which is, and at all relevant times was, a Delaware limited liability company.

31. TikTok, LLC wholly owns its subsidiary Defendant TikTok, Inc. f/k/a Musical.ly, Inc. ("TikTok, Inc."), a California corporation with its principal place of business in Culver City, CA.

32. Defendants TikTok, Ltd.; TikTok, LLC; TikTok, Inc.; ByteDance Ltd.; and ByteDance Inc. are referred to jointly as "ByteDance."

33. ByteDance owns, operates, controls, produces, designs, maintains, manages, develops, tests, labels, markets, advertises, promotes, supplies, and distributes the app TikTok. TikTok is widely available to consumers throughout the United States.

#### 4. Google

34. Google Inc. was incorporated in California in September 1998 and reincorporated in Delaware in August 2003. In or around 2017, Google Inc. converted to a Delaware limited liability company, Defendant Google, LLC (together with its predecessor-in-interest Google Inc., "Google"). Google's principal place of business is in Mountain View, CA.

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<sup>6</sup> See Juro Osawa & Shai Oster, *Beijing Tightens Grip on ByteDance by Quietly Taking Stake, China Board Seat*, The Information (Aug. 16, 2021), available at <https://www.theinformation.com/articles/beijing-tightens-grip-on-bytedance-by-quietly-taking-stake-china-board-seat?rc=ubpjcg>.

35. Since 2006, Google has operated, done business as, and wholly owned as its subsidiary Defendant YouTube, LLC (“YouTube, LLC”). YouTube, LLC is a Delaware limited liability company with its principal place of business in San Bruno, CA. YouTube is widely available to consumers throughout the United States.<sup>7</sup>

36. On October 2, 2015, Google reorganized and became a wholly owned subsidiary of a new holding company, Alphabet Inc., a Delaware corporation with its principal place of business in Mountain View, CA.

37. Google, LLC and YouTube, LLC (together, “Google”) are alter egos of one another: together and in concert they own, operate, control, produce, design, maintain, manage, develop, test, label, market, advertise, promote, supply, and distribute the app YouTube.

### **III. JURISDICTION AND VENUE**

38. This Court has subject matter jurisdiction over this action pursuant to 28 U.S.C. § 1332(a) because: (i) the amount in controversy exceeds \$75,000, exclusive of interests and costs, and (ii) the plaintiff and defendants are citizens of different states.

39. This Court has personal jurisdiction over each Defendant as each Defendant purposefully availed itself of the privilege of exploiting forum-based business opportunities and the exercise of personal jurisdiction is consistent with MD. CODE ANN., CTS. & JUD. PROC. §§6-101 and 6-103. This Court also has personal jurisdiction over Defendants under 18 U.S.C. §1964(c).

40. Venue is proper pursuant to 28 U.S.C. §1391 because a substantial part of the events or omissions giving rise to the claims asserted herein arose in this District and Defendants are subject to personal jurisdiction in this District.

### **IV. FACTUAL ALLEGATIONS**

#### **A. DEFENDANTS’ APPS HAVE CREATED A YOUTH MENTAL HEALTH CRISIS.**

41. Nearly a decade of scientific and medical studies demonstrate that dangerous features engineered into Defendants’ platforms—particularly when used multiple hours a day—

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<sup>7</sup> See, e.g., Alphabet Inc., *Form 10-Q*, Oct. 25, 2022, at 4 (defining Alphabet as “Alphabet Inc. and its subsidiaries.”), available at <https://www.sec.gov/Archives/edgar/data/1652044/000165204422000090/goog-20220930.htm>.

1 can have a “detrimental effect on the psychological health of [their] users,” including compulsive  
 2 use, addiction, body dissatisfaction, anxiety, depression, and self-harming behaviors such as eating  
 3 disorders.<sup>8</sup>

4 42. Addiction and compulsive use of Defendants’ products can entail a variety of  
 5 behavioral problems including but not limited to: (1) a lessening of control, (2) persistent,  
 6 compulsive seeking out of access to the product, (3) using the product more, and for longer, than  
 7 intended, (4) trying to cut down on use but being unable to do so, (5) experiencing intense cravings  
 8 or urges to use, (6) tolerance (needing more of the product to achieve the same desired effect), (7)  
 9 developing withdrawal symptoms when not using the product, or when the product is taken away,  
 10 (8) neglecting responsibilities at home, work, or school because of the intensity of usage, (9)  
 11 continuing to use the product even when doing so interferes and causes problems with important  
 12 family and social relationships, (10) giving up important or desirable social and recreational  
 13 activities due to use, and (11) continuing to use despite the product causing significant harm to the  
 14 user’s physical and mental health.

15 43. Many of these injuries can be long-lasting, if not lifelong. For example, the long-  
 16 term effects of eating disorders can include: (1) dermatological effects to the nails and hair;  
 17 (2) gastrointestinal illnesses, such as gastroparesis or hypomotility of the colon; (3) impacts to the  
 18 endocrine system, such as glycolic or metabolic conditions, bone loss, and hormonal conditions;  
 19 (4) nervous system effects, such as gray matter brain loss or atrophy; (5) skeletal system effects,  
 20 such as bone loss; (6) cardiovascular effects, such as structural heart damage, mitral valve prolapse,  
 21 or fluid around the heart; and (7) fertility issues.<sup>9</sup>

22  
 23  
 24 <sup>8</sup> See, e.g., Fazida Karim *et al.*, *Social Media Use and Its Connection to Mental Health: A*  
 25 *Systemic Review*, Cureus Volume 12(6) (June 15, 2020),  
 26 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7364393/>; Alexandra R. Lonergan *et al.*, *Protect*  
 27 *me from my selfie: Examining the association between photo-based social media behaviors and*  
 28 *self-reported eating disorders in adolescence*, *Int. J. of Eating Disorders* 756 (Apr. 7, 2020),  
<https://onlinelibrary.wiley.com/doi/epdf/10.1002/eat.23256>.

<sup>9</sup> See, e.g., Anorexia Nervosa, Cleveland Clinic <https://my.clevelandclinic.org/health/diseases/9794-anorexia-nervosa#outlook--prognosis>;  
 Bulimia Nervosa; Cleveland Clinic <https://my.clevelandclinic.org/health/diseases/9795-bulimia-nervosa#symptoms-and-causes>.

1           44. Each Defendant has long been aware of this research, but chose to ignore or brush  
2 it off.

3           45. Scientists have studied the impacts of the overuse of social media since at least 2008,  
4 with social media addiction recognized in literature around that time after a pervasive upsurge in  
5 Facebook use.<sup>10</sup> The *Bergen Social Media Addiction Scale* assesses social media addiction along  
6 six core elements: 1) salience (preoccupation with the activity), 2) mood modification (the behavior  
7 alters the emotional state), 3) tolerance (increasing activity is needed for the same mood-altering  
8 effects), 4) withdrawal (physical or psychological discomfort when the behavior is discontinued),  
9 5) conflict (ceasing other activities or social interaction to perform the behavior), and 6) relapse  
10 (resuming the behavior after attempting to control or discontinue it).<sup>11</sup>

11           46. Beginning in at least 2014, researchers began demonstrating that addictive and  
12 compulsive use of Defendants' apps leads to negative mental and physical outcomes for kids.

13           47. In 2014, a study of 10- to 12-year-old girls found that increased use of Facebook  
14 was linked with body image concerns, the idealization of thinness, and increased dieting.<sup>12</sup> (This  
15 study was sent to Mark Zuckerberg in 2018, in a letter signed by 118 public health advocates.)<sup>13</sup>

16           48. In 2016, a study demonstrated that young people who frequently use Defendants'  
17 apps are more likely to suffer sleep disturbances than their peers who use them infrequently.<sup>14</sup>  
18 Defendants' products, driven by intermittent variable rewards ("IVR") algorithms, as described  
19 below, deprive users of sleep by sending push notifications and emails at night, prompting children

20 <sup>10</sup> Tim Davies & Pete Cranston, *Youth Work and Social Networking: Interim Report*, The  
21 National Youth Agency (May 2008),  
22 [https://www.researchgate.net/publication/233911484\\_Youth\\_Work\\_and\\_Social\\_Networking\\_Final\\_Research\\_Report](https://www.researchgate.net/publication/233911484_Youth_Work_and_Social_Networking_Final_Research_Report).

23 <sup>11</sup> Cecilie Andreassen et al., *The relationship between addictive use of social media and video  
24 games and symptoms of psychiatric disorders: a large-scale cross-sectional study*, 30(2) Psychol.  
25 of Addictive Behav., 252-262 (2016), <http://dx.doi.org/10.1037/adb0000160>.

26 <sup>12</sup> Marika Tiggemann & Amy Slater, *NetTweens: The Internet and body image concerns in  
27 preteenage girls*, 34(5), J. Early Adolesc. 606-620 (June 2014),  
28 <https://journals.sagepub.com/doi/epub/10.1177/0272431613501083>.

<sup>13</sup> Campaign for a Commercial-Free Childhood, *Letter to Mark Zuckerberg Re: Facebook  
Messenger Kids* (Jan. 30, 2018), <https://fairplayforkids.org/wp-content/uploads/archive/develop/gaw/FBMessengerKids.pdf>.

<sup>14</sup> Jessica C. Levenson et al., *The Association Between Social Media Use and Sleep Disturbance  
Among Young Adults*, 85 Preventive Med. 36-41 (Apr. 2016),  
<https://www.sciencedirect.com/science/article/abs/pii/S0091743516000025>.



1 to re-engage with the apps when they should be sleeping. Disturbed and insufficient sleep is  
 2 associated with poor health outcomes,<sup>15</sup> including increased risk of major depression—by a factor  
 3 of more than three—<sup>16</sup>and future suicidal behavior in adolescents.<sup>17</sup> The American Academy of  
 4 Sleep Medicine has recommended that, in a 24-hour period, children aged 6–12 years should  
 5 regularly sleep 9–12 hours and teenagers aged 13–18 years should sleep 8–10 hours.<sup>18</sup>

6 49. In another 2016 study, 52% of girls said they use image filters every day, and 80%  
 7 reported using an app to change their appearance before the age of 13.<sup>19</sup> In fact, 77% of girls  
 8 reported trying to change or hide at least one part of their body before posting a photo of themselves,  
 9 and 50% believe they did not look good enough without editing.<sup>20</sup>

10 50. In 2017, British researchers asked 1,500 teens to rate how Instagram, Snapchat, and  
 11 YouTube affected them on certain well-being measures, including anxiety, loneliness, body image,  
 12 and sleep.<sup>21</sup> Teens rated all three platforms as having a negative impact on body image, “FOMO”  
 13

14  
 15 <sup>15</sup> Jessica C. Levenson et al., *The Association Between Social Media Use and Sleep Disturbance*  
 16 *Among Young Adults*, 85 *Preventive Med.* 36–41 (Apr. 2016),  
 17 <https://www.sciencedirect.com/science/article/abs/pii/S0091743516000025>; National Institute of  
 18 Mental Health. 2016. The teen brain: 6 things to know, available at  
 19 <https://www.nimh.nih.gov/health/publications/the-teen-brain-still-under-construction/index.shtml>;  
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22 <sup>16</sup> E. Roberts & H Doung, *The Prospective Association between Sleep Deprivation and*  
 23 *Depression among Adolescents* *Sleep*, Volume 37, Issue 2, 1 Feb. 2014.

24 <sup>17</sup> X. Liu, D. Buysse, *Sleep and youth suicidal behavior: a neglected field*, *Current Opinion in*  
 25 *Psychiatry* (May 2006).

26 <sup>18</sup> S. Paruthi, L. Brooks, C. D’Ambrosio, et al, *Consensus statement of the American Academy of*  
 27 *Sleep Medicine on the recommended amount of sleep for healthy children: methodology and*  
 28 *discussion*, 12 *J Clin Sleep Med* 1549–61 (2016).

<sup>19</sup> Anna Haines, *From “Instagram Face” to “Snapchat Dysmorphia”: How Beauty Filters Are*  
*Changing the Way We See Ourselves*, *Forbes* (Apr. 27, 2021),  
[https://www.forbes.com/sites/annahaines/2021/04/27/from-instagram-face-to-snapchat-](https://www.forbes.com/sites/annahaines/2021/04/27/from-instagram-face-to-snapchat-dysmorphia-how-beauty-filters-are-changing-the-way-we-see-ourselves/?sh=3c32eb144eff)  
[dysmorphia-how-beauty-filters-are-changing-the-way-we-see-ourselves/?sh=3c32eb144eff](https://www.forbes.com/sites/annahaines/2021/04/27/from-instagram-face-to-snapchat-dysmorphia-how-beauty-filters-are-changing-the-way-we-see-ourselves/?sh=3c32eb144eff).

<sup>20</sup> Anna Haines, *From “Instagram Face” to “Snapchat Dysmorphia”: How Beauty Filters Are*  
*Changing the Way We See Ourselves*, *Forbes* (Apr. 27, 2021),  
[https://www.forbes.com/sites/annahaines/2021/04/27/from-instagram-face-to-snapchat-](https://www.forbes.com/sites/annahaines/2021/04/27/from-instagram-face-to-snapchat-dysmorphia-how-beauty-filters-are-changing-the-way-we-see-ourselves/?sh=3c32eb144eff)  
[dysmorphia-how-beauty-filters-are-changing-the-way-we-see-ourselves/?sh=3c32eb144eff](https://www.forbes.com/sites/annahaines/2021/04/27/from-instagram-face-to-snapchat-dysmorphia-how-beauty-filters-are-changing-the-way-we-see-ourselves/?sh=3c32eb144eff).

<sup>21</sup> Royal Society for Public Health, *#StatusOfMind*,  
<https://www.rsph.org.uk/static/uploaded/d125b27c-0b62-41c5-a2c0155a8887cd01.pdf>; see also  
 Jonathan Haidt, *The Dangerous Experiment on Teen Girls*, *The Atlantic* (Nov. 21, 2021),  
 available at [https://www.theatlantic.com/ideas/archive/2021/11/facebooks-dangerous-](https://www.theatlantic.com/ideas/archive/2021/11/facebooks-dangerous-experiment-teen-girls/620767/)  
[experiment-teen-girls/620767/](https://www.theatlantic.com/ideas/archive/2021/11/facebooks-dangerous-experiment-teen-girls/620767/).

(fear of missing out), and sleep. Teens also noted that Instagram and Snapchat had a negative impact on anxiety, depression, and loneliness.

51. In 2018, a *Journal of Social and Clinical Psychology* study examined a group of college students whose use of Instagram, Facebook, and Snapchat was limited to 10 minutes per day per platform. The study found that this limited-use group showed “significant reductions in loneliness and depression over three weeks” compared to a control group that used social media as usual.<sup>22</sup>

52. In 2018, a systematic literature review of nine studies published in the *Indian Journal of Psychiatry* concluded that dangerous features in social networking platforms “contribute to increased exposure to and engagement in self-harm behavior, as users tend to emulate self-injurious behavior of others online, adopt self-injurious practices from self-harm videos, or are encouraged and acclaimed by others, thus normalizing self-injurious thoughts and behavior.”<sup>23</sup>

53. A 2019 survey of American adolescents ages 12-14 found that a user’s displeasure with their body could be predicted based on their frequency of using social media (including Instagram and Facebook) and based on the extent to which they engaged in behaviors that adopt an observer’s point-of-view (such as taking selfies or asking others to “rate one’s looks”). This effect was more pronounced among girls than boys.<sup>24</sup>

54. A third study in 2019 of more than 6500 American adolescents ranging in age from 12 to 15 years old found that those who used social media for 3 hours or more per day were more likely to suffer from mental health problems such as anxiety and depression.<sup>25</sup> Notably, this

<sup>22</sup> Melissa G. Hunt et al., *No More FOMO: Limiting Social Media Decreases Loneliness and Depression*, 37 J. of Social & Clinical Psych. (Dec. 5, 2018), <https://guilfordjournals.com/doi/epdf/10.1521/jscp.2018.37.10.751>.

<sup>23</sup> Aksha Memon et al., *The role of online social networking on deliberate self-harm and suicidality in adolescents: a systematized review of literature*, 60(4) Indian J Psychiatry 384-392 (Oct-Dec 2018), <http://10.4103/psychiatry.IndianJPsychiatry.414.17>.

<sup>24</sup> Ilyssa Salomon & Christia Spears Brown, *The Selfie Generation: Examining the Relationship Between Social Media Use and Early Adolescent Body Image*, Journal of Early Adolescence (Apr. 21, 2018), <https://journals.sagepub.com/doi/abs/10.1177/0272431618770809>.

<sup>25</sup> Kira Riehm et al., *Associations between time spent using social media and internalizing and externalizing problems among US youth*, 76(12) JAMA Psychiatry (2019), <https://jamanetwork.com/journals/jamapsychiatry/fullarticle/2749480>.



association remained significant even *after* adjusting for demographics, past alcohol and marijuana use, and history of mental health problems.<sup>26</sup>

55. In 2020, a study of Australian adolescents found that investment in others' selfies (through likes and comments) was associated with greater odds of meeting criteria for clinical/subclinical bulimia nervosa, clinical/subclinical binge-eating disorder, night eating syndrome, and unspecified feeding and eating disorders.<sup>27</sup>

56. In 2020, a longitudinal study investigated whether "Facebook Addiction Disorder" predicted suicide-related outcomes, and found that children and adolescents addicted to Facebook are more likely to engage in self-injurious behavior, such as cutting and suicide.<sup>28</sup>

57. In 2020, clinical research demonstrated an observable link between youth social media use and disordered eating behavior.<sup>29</sup> The more time young girls spend using Defendants' products, the more likely they are to develop disordered eating behaviors.<sup>30</sup> And the more social media accounts adolescents have, the more disordered eating behaviors they exhibit.<sup>31</sup>

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<sup>26</sup> Kira Riehm et al., *Associations between time spent using social media and internalizing and externalizing problems among US youth*, 76(12) JAMA Psychiatry (2019), <https://jamanetwork.com/journals/jamapsychiatry/fullarticle/2749480>.

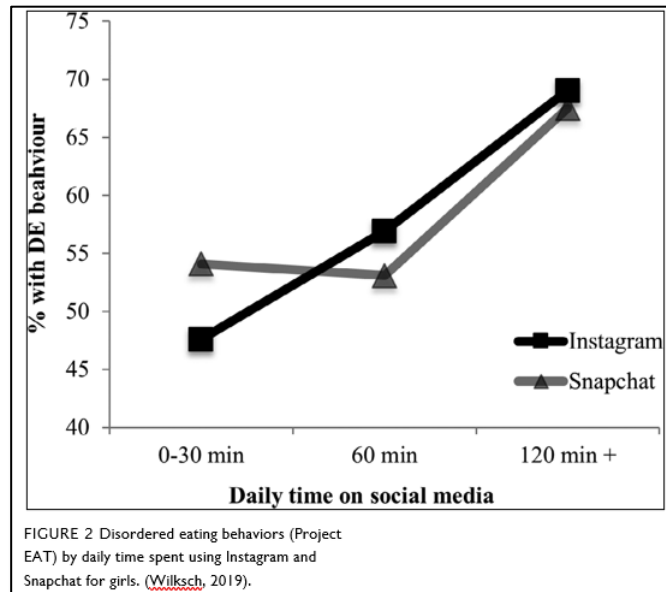
<sup>27</sup> Alexandra R. Lonergan et al., *Protect Me from My Selfie: Examining the Association Between Photo-Based Social Media Behaviors and Self-Reported Eating Disorders in Adolescence*, Int'l J. of Eating Disorders (Apr. 7, 2020), <https://onlinelibrary.wiley.com/doi/epdf/10.1002/eat.23256>.

<sup>28</sup> See, e.g., Julia Brailovskaia et al., *Positive mental health mediates the relationship between Facebook addiction disorder and suicide-related outcomes: a longitudinal approach*, 00(00) Cyberpsychology, Behavior, and Social Networking (2020), <https://doi.org/10.1089/cyber.2019.0563>; Jean M. Twenge et al., *Increases in Depressive Symptoms, Suicide-Related Outcomes, and Suicide Rates Among U.S. Adolescents After 2010 and Links to Increased New Media Screen Time*, 6 Clinical Psych. Sci. 3–17 (2018).

<sup>29</sup> Simon M. Wilksch et al., *The relationship between social media use and disordered eating in young adolescents*, 53 Int'l J. Eating Disorders 96–106 (2020), <https://pubmed.ncbi.nlm.nih.gov/31797420/>.

<sup>30</sup> Simon M. Wilksch et al., *The relationship between social media use and disordered eating in young adolescents*, 53 Int'l J. Eating Disorders 96–106 (2020), <https://pubmed.ncbi.nlm.nih.gov/31797420/>.

<sup>31</sup> Simon M. Wilksch et al., *The relationship between social media use and disordered eating in young adolescents*, 53 Int'l J. Eating Disorders 96–106 (2020), <https://pubmed.ncbi.nlm.nih.gov/31797420/>.



58. Eating disorders often occur simultaneously with other self-harm behaviors such as cutting and are often associated with suicide.<sup>32</sup>

59. In a 2021 study, female undergraduates were randomly shown thinspiration (low body mass index and not muscular), fitspiration (muscular and exercising), or neutral photos.<sup>33</sup> Thinspiration and fitspiration images lowered self-esteem, even in those with a self-perceived healthy weight.<sup>34</sup>

60. A 2022 study of Italian adolescent girls (12-17) and young women (18-28) found that Instagram's image editing and browsing features, combined with an emphasis on influencer interactions, promulgated unattainable body ideals that caused users to compare their bodies to those ideals.<sup>35</sup> These trends were more prominent among adolescent girls, given their higher

<sup>32</sup> Sonja Swanson et al., *Prevalence and correlates of eating disorders in adolescents*, 68(7) Arch Gen Psychiatry 717-723 (2011), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5546800/>.

<sup>33</sup> Karikarn Chansiri & Thipkanok Wongphothipphan, *The indirect effects of Instagram images on women's self-esteem: The moderating roles of BMI and perceived weight*, 00(0) New Media & Society 1-23 (2021), <https://journals.sagepub.com/doi/epub/10.1177/14614448211029975>.

<sup>34</sup> Karikarn Chansiri & Thipkanok Wongphothipphan, *The indirect effects of Instagram images on women's self-esteem: The moderating roles of BMI and perceived weight*, 00(0) New Media & Society 1-23 (2021), <https://journals.sagepub.com/doi/epub/10.1177/14614448211029975>.

<sup>35</sup> Federica Pedalino and Anne-Linda Camerini, *Instagram use and body dissatisfaction: The mediating role of upward social comparison with peers and influencers among young females*, 19(3) Int'l J of Environmental Research and Public Health 1543 (2022), <https://www.mdpi.com/1660-4601/19/3/1543>.

1 susceptibility to social pressures related to their bodies and given the physical changes associated  
2 with puberty.

3 61. In 2023, a study of magnetic resonance images demonstrated that compulsive use  
4 of Defendants' apps measurably alters children's brains.<sup>36</sup> This study measured fMRI responses in  
5 12-year-old adolescents who used Facebook, Instagram, and Snapchat over a three-year period and  
6 found that neural patterns diverged. Specifically, those who engaged in high social media checking  
7 behavior "showed lower neural sensitivity to social anticipation" than those who engaged in low to  
8 moderate checking behavior.<sup>37</sup>

9 62. Defendants' apps have triggered depression, anxiety, eating disorders, self-harm,  
10 and suicidality among thousands of children. Defendants have created a crisis.

11 63. From 2009 to 2019, the rate of high school students who reported persistent sadness  
12 or hopelessness increased by 40% (to one out of every three kids).<sup>38</sup> The share of kids who seriously  
13 considered suicide increased by 36%, and those that created a suicide plan increased by 44%.<sup>39</sup>

14 64. From 2007 to 2019, suicide rates among youth aged 10-24 in the United States  
15 increased by 57%.<sup>40</sup>

16 65. From 2007 to 2016, emergency room visits for youth aged 5-17 rose 117% for  
17 anxiety disorders, 44% for mood disorders, and 40% for attention disorders.<sup>41</sup>

18  
19  
20 <sup>36</sup> Maria Maza et al., *Association of habitual checking behaviors on social media with*  
21 *longitudinal functional brain development*, JAMA Ped., (Jan. 3, 2023),  
22 <https://jamanetwork.com/journals/jamapediatrics/article-abstract/2799812>.

23 <sup>37</sup> Maria Maza et al., *Association of habitual checking behaviors on social media with*  
24 *longitudinal functional brain development*, JAMA Ped., (Jan. 3, 2023),  
25 <https://jamanetwork.com/journals/jamapediatrics/article-abstract/2799812>.

26 <sup>38</sup> *Protecting Youth Mental Health: The U.S. Surgeon General's Advisory* at 8, U.S. Dep't Health  
27 & Hum. Servs. (Dec. 7, 2021), [https://www.hhs.gov/sites/default/files/surgeon-general-youth-](https://www.hhs.gov/sites/default/files/surgeon-general-youth-mental-health-advisory.pdf)  
28 [mental-health-advisory.pdf](https://www.hhs.gov/sites/default/files/surgeon-general-youth-mental-health-advisory.pdf).

<sup>39</sup> *Protecting Youth Mental Health: The U.S. Surgeon General's Advisory* at 8, U.S. Dep't Health  
& Hum. Servs. (Dec. 7, 2021), [https://www.hhs.gov/sites/default/files/surgeon-general-youth-](https://www.hhs.gov/sites/default/files/surgeon-general-youth-mental-health-advisory.pdf)  
[mental-health-advisory.pdf](https://www.hhs.gov/sites/default/files/surgeon-general-youth-mental-health-advisory.pdf).

<sup>40</sup> *Protecting Youth Mental Health: The U.S. Surgeon General's Advisory* at 8, U.S. Dep't Health  
& Hum. Servs. (Dec. 7, 2021), [https://www.hhs.gov/sites/default/files/surgeon-general-youth-](https://www.hhs.gov/sites/default/files/surgeon-general-youth-mental-health-advisory.pdf)  
[mental-health-advisory.pdf](https://www.hhs.gov/sites/default/files/surgeon-general-youth-mental-health-advisory.pdf).

<sup>41</sup> Charmaine Lo, *Children's mental health emergency department visits: 2007-2016*, 145(6)  
Pediatrics e20191536 (June 2020), <https://doi.org/10.1542/peds.2019-1536>.

66. By 2019, one-in-five children aged 3-17 in the United States had a mental, emotional, developmental, or behavioral disorder.<sup>42</sup> Mental health issues are particularly acute among females.<sup>43</sup>

67. On December 7, 2021, the United States Surgeon General issued an advisory on the youth mental health crisis.<sup>44</sup> The Surgeon General explained, “[m]ental health challenges in children, adolescents, and young adults are real and widespread. Even before the pandemic, an alarming number of young people struggled with feelings of helplessness, depression, and thoughts of suicide—and rates have increased over the past decade.”<sup>45</sup> Those “mental health challenges were the leading cause of disability and poor life outcomes in young people.”<sup>46</sup>

68. On February 13, 2023, the CDC released new statistics revealing that, in 2021, one in three girls seriously considered attempting suicide.<sup>47</sup>

As discussed herein, each of the Defendants’ products manipulates minor users’ brains by building in stimuli and social reward mechanisms (e.g., “Likes”) that cause users to compulsively

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<sup>42</sup> *U.S. Surgeon General Issues Advisory on Youth Mental Health Crisis Further Exposed by COVID-19 Pandemic*, U.S. Dep’t Health & Hum. Servs. (Dec. 14, 2021), <https://adasoutheast.org/u-s-surgeon-general-issues-advisory-on-youth-mental-health-crisis-further-exposed-by-covid-19-pandemic/>; see also Jean M. Twenge et al., *Increases in Depressive Symptoms, Suicide-Related Outcomes, and Suicide Rates Among U.S. Adolescents After 2010 and Links to Increased New Media Screen Time*, 6 *Clinical Psych. Sci.* 3–17 (2017), <https://doi.org/10.1177/216770261772337> (noting that mental health issues are particularly acute among females).

<sup>43</sup> *U.S. Surgeon General Issues Advisory on Youth Mental Health Crisis Further Exposed by COVID-19 Pandemic*, U.S. Dep’t Health & Hum. Servs. (Dec. 14, 2021), <https://adasoutheast.org/u-s-surgeon-general-issues-advisory-on-youth-mental-health-crisis-further-exposed-by-covid-19-pandemic/>

<sup>44</sup> *U.S. Surgeon General Issues Advisory on Youth Mental Health Crisis Further Exposed by COVID-19 Pandemic*, U.S. Dep’t Health & Hum. Servs. (Dec. 14, 2021), <https://adasoutheast.org/u-s-surgeon-general-issues-advisory-on-youth-mental-health-crisis-further-exposed-by-covid-19-pandemic/>.

<sup>45</sup> *U.S. Surgeon General Issues Advisory on Youth Mental Health Crisis Further Exposed by COVID-19 Pandemic*, U.S. Dep’t Health & Hum. Servs. (Dec. 14, 2021), <https://adasoutheast.org/u-s-surgeon-general-issues-advisory-on-youth-mental-health-crisis-further-exposed-by-covid-19-pandemic/>

<sup>46</sup> *U.S. Surgeon General Issues Advisory on Youth Mental Health Crisis Further Exposed by COVID-19 Pandemic*, U.S. Dep’t Health & Hum. Servs. (Dec. 14, 2021), <https://adasoutheast.org/u-s-surgeon-general-issues-advisory-on-youth-mental-health-crisis-further-exposed-by-covid-19-pandemic/>

<sup>47</sup> Azeen Ghorayashi & Roni Caryn Rabin, *Teen Girls Report Record Levels of Sadness, C.D.C. Finds*, N.Y. Times (Feb. 13, 2023), <https://www.nytimes.com/2023/02/13/health/teen-girls-sadness-suicide-violence.html>.

1 seek social rewards. That, in turn, leads to neuroadaptation; a child requires more and more  
 2 stimuli to obtain the desired dopamine release, along with further impairments of decision-  
 3 making. It also leads to reward-seeking through increasingly extreme content, which is more  
 4 likely to generate intense reactions from other users. These consequences are the foreseeable  
 5 results of Defendants' engineering decisions.

6 **B. DEFENDANTS TARGET CHILDREN AS A CORE MARKET, HOOKING**  
 7 **KIDS ON THEIR ADDICTIVE SOCIAL MEDIA PLATFORMS.**

8 69. Each Defendant designs, engineers, markets, and operates its products to maximize  
 9 the number of children who download and use them compulsively. Children are more vulnerable  
 10 users and have more free time on their hands than their adult counterparts. Because children use  
 11 Defendants' products more, they see more ads, and as a result generate more ad revenue for  
 12 Defendants. Young users also generate a trove of data about their preferences, habits, and  
 13 behaviors. That information is Defendants' most valuable commodity. Defendants mine and  
 14 commodify that data, including by selling to advertisers the ability to reach incredibly narrow  
 15 tranches of the population, including children. Each Defendant placed its app(s) into the stream of  
 16 commerce and generated revenues through the distribution of those apps at the expense of the  
 17 consuming public.

18 70. Addicting young children and teens is central to Defendants' profitability. Like the  
 19 cigarette industry a generation earlier, Defendants understand that a child user today becomes an  
 20 adult user tomorrow. Indeed, Defendants' insatiable appetite for growth has created a need for  
 21 younger and younger users. Defendants' wrongfully acquired knowledge of their childhood  
 22 userbase has allowed them to develop product designs to target elementary school-age children,  
 23 who are uniquely vulnerable. Like Joe Camel of old, Defendants' recent attempts to capture pre-  
 24 adolescent audiences include "kid versions" of apps that are "designed to fuel [kids'] interest in  
 25 the grown-up version."<sup>48</sup>

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 27  
 28 <sup>48</sup> Leonard Sax, *Is TikTok Dangerous for Teens?*, Inst. Fam. Stud. (Mar. 29, 2022),  
<https://ifstudies.org/blog/is-tiktok-dangerous-for-teens->.

71. Recognizing the vulnerability of children under 13, particularly in the Internet age, Congress enacted the Children’s Online Privacy Protection Act (“COPPA”) in 1999.<sup>49</sup> COPPA regulates the conditions under which Defendants can collect, use, or disclose the personal information of children under 13. Under COPPA, developers of apps and websites that are directed to or known to be used by children under 13 cannot lawfully obtain the individually identifiable information of such children without first obtaining verifiable consent from their parents.<sup>50</sup> Even apart from COPPA, it is well established under the law that children lack the legal or mental capacity to make informed decisions about their own well-being.

72. COPPA was enacted precisely because Congress recognized that children under age 13 are particularly vulnerable to being taken advantage of by unscrupulous website operators. As a June 1998 report by the FTC observed, “[t]he immediacy and ease with which personal information can be collected from children online, combined with the limited capacity of children to understand fully the potentially serious safety and privacy implications of providing that information, have created deep concerns about current information practices involving children online.”<sup>51</sup> The same report observed that children under the age of 13 “generally lack the developmental capacity and judgment to give meaningful consent to the release of personal information to a third party.”<sup>52</sup>

73. Contemporaneous testimony by the Chairman of the FTC observed that the Internet “make[s] it easy for children to disclose personal information to the general public

<sup>49</sup> See 15 U.S.C. §§ 6501-6506.

<sup>50</sup> The FTC recently clarified that acceptable methods for obtaining verifiable parent consent include: (a) providing a form for parents to sign and return; (b) requiring the use of a credit/card online payment that provides notification of each transaction; (c) connecting to trained personnel via video conference; (d) calling a staffed toll-free number; (e) asking knowledge-based questions; or (f) verifying a photo-ID from the parent compared to a second photo using facial recognition technology. Federal Trade Commission, *Complying with COPPA: Frequently Asked Questions*, July 2020, <https://www.ftc.gov/business-guidance/resources/complying-coppa-frequently-asked-questions>.

<sup>51</sup> *Privacy Online: A Report to Congress*, Federal Trade Commission (1998) at 13. <https://www.ftc.gov/sites/default/files/documents/reports/privacy-online-report-congress/priv-23a.pdf>.

<sup>52</sup> *Privacy Online: A Report to Congress*, Federal Trade Commission (1998) at 13. <https://www.ftc.gov/sites/default/files/documents/reports/privacy-online-report-congress/priv-23a.pdf>.



without their parents' awareness or consent. Such public disclosures raise safety concerns."<sup>53</sup> Further, "the practice of collecting personal identifying information directly from children without parental consent is clearly troubling, since it teaches children to reveal their personal information to strangers and circumvents parental control over their family's information."<sup>54</sup>

74. None of the Defendants conduct proper age verification or authentication. Instead, each Defendant leaves it to users to self-report their age. This unenforceable and facially inadequate system allows children under 13 to easily create accounts on Defendants' apps.

75. This is particularly egregious for two reasons. *First*, Defendants have long been on notice of the problem. For instance, in May 2011, Consumer Reports reported the "troubling news" that 7.5 million children under 13 were on Facebook.<sup>55</sup> *Second*, given that Defendants have developed and utilized age-estimation algorithms for the purpose of selling user data and targeted advertisements, Defendants could readily use these algorithms to prevent children under 13 from accessing their products, but choose not to do so. Instead, they have turned a blind eye to collecting children's data in violation of COPPA.

76. Defendants have done this because children are financially lucrative, particularly when they are addicted to Defendants' apps.

**1. Children are uniquely susceptible to Defendants' addictive apps.**

77. Young people are not only Defendants' most lucrative market, but are also those most vulnerable to harms resulting from Defendants' products. "Everyone innately responds to social approval."<sup>56</sup> "[B]ut some demographics, in particular teenagers, are more vulnerable to it

<sup>53</sup> S. 2326, Children's Online Privacy Protection Act of 1998: Hearing Before the U.S. Sen. Subcom. On Communications, Comm. On Commerce, Science, and Transportation, 105<sup>th</sup> Cong. 11 (1998) (statement of Robert Pitofsky, Chairman, Federal Trade Commission).

<sup>54</sup> S. 2326, Children's Online Privacy Protection Act of 1998: Hearing Before the U.S. Sen. Subcom. On Communications, Comm. On Commerce, Science, and Transportation, 105<sup>th</sup> Cong. 11 (1998) (statement of Robert Pitofsky, Chairman, Federal Trade Commission).

<sup>55</sup> Emily Bazelon, *Why Facebook is After Your Kids*, N.Y. Times (Oct. 12, 2011), <https://www.nytimes.com/2011/10/16/magazine/why-facebook-is-after-your-kids.html>.

<sup>56</sup> Von Tristan Harris, *The Slot Machine in Your Pocket*, Spiegel Int'l (July 27, 2016), <https://www.spiegel.de/international/zeitgeist/smartphone-addiction-is-part-of-the-design-a-1104237.html>.

1 than others.”<sup>57</sup> Unlike adults, who “tend to have a fixed sense of self that relies less on feedback  
 2 from peers,”<sup>58</sup> adolescents are in a “period of personal and social identity formation” that “is now  
 3 reliant on social media.”<sup>59</sup>

4 78. To understand the impact Defendants’ apps have on young people, it is helpful to  
 5 understand some basics about the human brain.

6 79. The frontal lobes of the brain—particularly the prefrontal cortex—control higher-  
 7 order cognitive functions. This region of the brain is central to planning and executive decision-  
 8 making, including the evaluation of risk and reward. It also helps inhibit impulsive actions and  
 9 “regulate emotional responses to social rewards.”<sup>60</sup>

10 80. Children and adolescents are especially vulnerable to developing harmful behaviors  
 11 because their prefrontal cortex is not fully developed.<sup>61</sup> Indeed, it is one of the last regions of the  
 12 brain to mature.<sup>62</sup> In the images below, the blue color depicts brain development.<sup>63</sup>

17 <sup>57</sup> Von Tristan Harris, *The Slot Machine in Your Pocket*, Spiegel Int’l (July 27, 2016),  
 18 <https://www.spiegel.de/international/zeitgeist/smartphone-addiction-is-part-of-the-design-a-1104237.html>.

19 <sup>58</sup> Zara Abrams, *Why young brains are especially vulnerable to social media*, Am. Psych. Ass’n  
 (Aug. 25, 2022), <https://www.apa.org/news/apa/2022/social-media-children-teens>.

20 <sup>59</sup> Betul Keles et al., *A systematic review: the influence of social media on depression, anxiety and*  
*psychological distress in adolescents*, Int’l J. Adolescence & Youth (202) 25:1, 79–93 (Mar. 3,  
 21 2019),  
 22 [https://www.researchgate.net/publication/331947590\\_A\\_systematic\\_review\\_the\\_influence\\_of\\_social\\_media\\_on\\_depression\\_anxiety\\_and\\_psychological\\_distress\\_in\\_adolescents](https://www.researchgate.net/publication/331947590_A_systematic_review_the_influence_of_social_media_on_depression_anxiety_and_psychological_distress_in_adolescents).

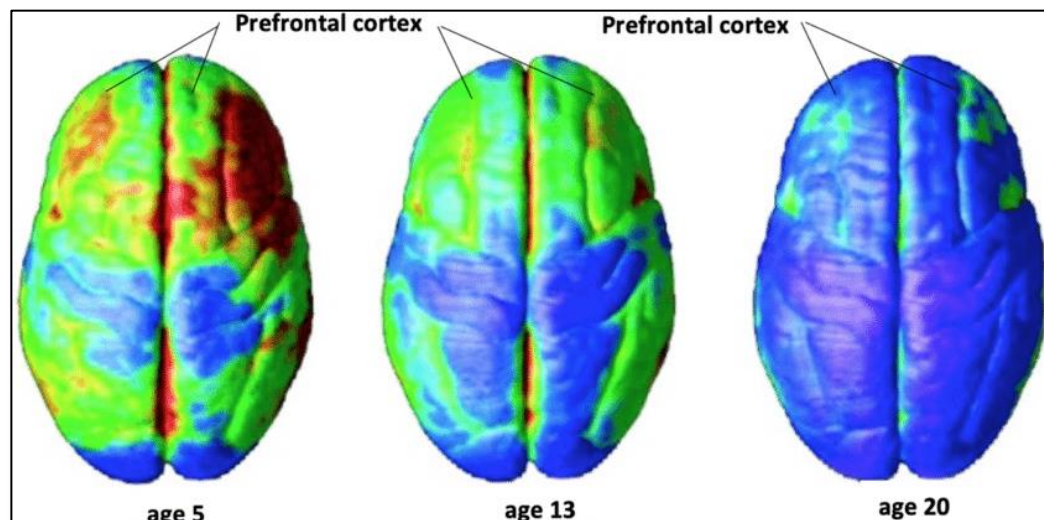
23 <sup>60</sup> Zara Abrams, *Why young brains are especially vulnerable to social media*, Am. Psych. Ass’n  
 (Aug. 25, 2022), <https://www.apa.org/news/apa/2022/social-media-children-teens>.

24 <sup>61</sup> Nino Gugushvili et al., *Facebook use intensity and depressive symptoms: a moderated*  
*mediation model of problematic Facebook use, age, neuroticism, and extraversion* at 3, BMC  
 Psych. 10, 279 (2022), <https://doi.org/10.1186/s40359-022-00990-7>.

25 <sup>62</sup> Nino Gugushvili et al., *Facebook use intensity and depressive symptoms: a moderated*  
*mediation model of problematic Facebook use, age, neuroticism, and extraversion* at 3, BMC  
 26 Psych. 10, 279 (2022), <https://doi.org/10.1186/s40359-022-00990-7>.

27 <sup>63</sup> Heiner Boettger, & Deborah Koeltezsch, , *The fear factor: Xenoglossophobia or how to*  
*overcome the anxiety of speaking foreign languages*, 4, Training Language and Culture, 43-55  
 28 (June 2020), [https://www.researchgate.net/figure/Development-of-the-cortex-functions-The-PFC\\_fig1\\_342501707](https://www.researchgate.net/figure/Development-of-the-cortex-functions-The-PFC_fig1_342501707).





81. Because of the immaturity of their prefrontal cortex, young people have less impulse control, and less ability to regulate their responses to social rewards, than adults.

82. Beginning around the age of 10, the brain also begins to change in important ways. Specifically, the receptors for dopamine multiply in the subcortical region of the brain.<sup>64</sup> Dopamine is a neurotransmitter that is central to the brain's reward system.<sup>65</sup>

83. During this developmental phase, the brain learns to seek out stimuli (e.g., Instagram) that result in a reward (e.g., likes) and cause dopamine to flood the brain's reward pathways. Each time this happens, associations between the stimulus and the reward become stronger.<sup>66</sup> Notably, once the brain has learned to make this association, dopaminergic neurons "shift their ... activation from the time of reward delivery to the time of presentation of [a] predictive cue."<sup>67</sup> In other words, the anticipation of a reward can itself trigger a dopamine rush.

84. As New York University professor and social psychologist Adam Alter has explained, product features such as "Likes" give users a dopamine hit similar to drugs and

<sup>64</sup> Zara Abrams, *Why young brains are especially vulnerable to social media*, Am. Psych. Ass'n (Aug. 25, 2022), <https://www.apa.org/news/apa/2022/social-media-children-teens>.

<sup>65</sup> Zara Abrams, *Why young brains are especially vulnerable to social media*, Am. Psych. Ass'n (Aug. 25, 2022), <https://www.apa.org/news/apa/2022/social-media-children-teens>.

<sup>66</sup> See Bryo Adinoff, *Neurobiologic processes in drug reward and addiction*, 12(6) Harv. Rev. Psychiatry 305-320 (2004), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1920543/>.

<sup>67</sup> Luisa Speranza et al., *Dopamine: The Neuromodulator of Long-Term Synaptic Plasticity, Reward and Movement Control*, 10 Cells 735 (2021), <https://pubmed.ncbi.nlm.nih.gov/33810328/>.

1 alcohol: “The minute you take a drug, drink alcohol, smoke a cigarette . . . when you get a like on  
 2 social media, all of those experiences produce dopamine, which is a chemical that’s associated  
 3 with pleasure. When someone likes an Instagram post, or any content that you share, it’s a little  
 4 bit like taking a drug. As far as your brain is concerned, it’s a very similar experience.”<sup>68</sup>

5 85. When the release of dopamine in young brains is manipulated by Defendants’  
 6 products, it interferes with the brain’s development and can have long-term impacts on an  
 7 individual’s memory, affective processing, reasoning, planning, attention, inhibitory control, and  
 8 risk-reward calibration.

9 86. Given their limited capacity to self-regulate and their vulnerability to peer  
 10 pressure, children (including teens) are at greater risk of developing a mental disorder from use of  
 11 Defendants’ products.<sup>69</sup> Children are more susceptible than adults to feelings of withdrawal when  
 12 a dopamine hit wears off. Depending on the intensity, delivery, and timing of the stimulus, and  
 13 the severity of its withdrawal, these feelings can include anxiety, dysphoria, and irritability.<sup>70</sup>  
 14 Children also are more likely to engage in compulsive behaviors to avoid these symptoms, due to  
 15 their limited capacity for self-regulation, relative lack of impulse control, and struggle to delay  
 16 gratification.

17 87. This leads to a vicious cycle. Repeated spikes of dopamine over time may cause a  
 18 child to build up a tolerance for the stimulus. In this process of “neuroadaptation,” the production  
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21 <sup>68</sup> Eames Yates, *What happens to your brain when you get a like on Instagram*, Business Insider  
 22 (Mar. 25, 2017), [https://www.businessinsider.com/what-happens-to-your-brain-like-instagram-](https://www.businessinsider.com/what-happens-to-your-brain-like-instagram-dopamine-2017-3)  
 23 [dopamine-2017-3](https://www.businessinsider.com/what-happens-to-your-brain-like-instagram-dopamine-2017-3); see also Sören Krach et al., *The rewarding nature of social interactions*, 4(22)  
*Frontiers in Behav. Neuro.*, (28 May 2010),

24 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2889690/pdf/fnbeh-04-00022.pdf>; Julian  
 Morgans, *The Secret Ways Social Media Is Built for Addiction*, Vice (May 17, 2017),  
 25 <https://www.vice.com/en/article/vv5jkb/the-secret-ways-social-media-is-built-for-addiction>.

26 <sup>69</sup> Betül Keles et al., *A systematic review: the influence of social media on depression, anxiety and*  
*psychological distress in adolescents*, *Int’l J. Adolescence & Youth* (202) 25:1, 79–93 (Mar. 3,  
 2019), [https://www.researchgate.net/publication/331947590\\_A\\_systematic\\_review\\_the\\_influence](https://www.researchgate.net/publication/331947590_A_systematic_review_the_influence_of_social_media_on_depression_anxiety_and_psychological_distress_in_adolescents)  
 27 [of social media on depression anxiety and psychological distress in adolescents](https://www.researchgate.net/publication/331947590_A_systematic_review_the_influence_of_social_media_on_depression_anxiety_and_psychological_distress_in_adolescents)

28 <sup>70</sup> George Koob, and Nora Volkow. *Neurobiology of addiction: a neurocircuitry analysis*, 3 (8)  
*Lancet Psychiatry* 760-773 (2016),  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6135092/pdf/nihms-985499.pdf>.

of dopamine and the sensitivity of dopamine receptors are both reduced.<sup>71</sup> As a consequence, the child requires more and more of the stimulus to feel the same reward. Worse, this cycle can cause decreases in activity in the prefrontal cortex, leading to further impairments of decision-making and executive functioning.<sup>72</sup>

88. As described further below, each Defendant deliberately designed, engineered, and implemented dangerous features in their apps that present social-reward and other stimuli in a manner that has caused so many young users to compulsively seek out those stimuli, develop negative symptoms when they were withdrawn, and exhibit reduced impulse control and emotional regulation.

89. In short, children find it particularly difficult to exercise the self-control required to regulate their use of Defendants' platforms, given the stimuli and rewards embedded in those apps, and as a foreseeable consequence tend to engage in addictive and compulsive use.<sup>73</sup>

## 2. **Defendants design their apps to attract and addict youth.**

90. Instagram, Facebook, TikTok, Snap, and YouTube employ many similar defective and dangerous product features that are engineered to induce more use by young people—creating an unreasonable risk of compulsive use and addiction.<sup>74</sup> For instance, all five apps harvest user data and use this information to generate and push algorithmically tailored “feeds” of photos and videos. And all five include methods through which approval can be expressed and received, such as likes,

<sup>71</sup> George Koob, and Nora Volkow. *Neurobiology of addiction: a neurocircuitry analysis*, 3 (8) *Lancet Psychiatry* 760-773 (2016), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6135092/pdf/nihms-985499.pdf>.

<sup>72</sup> George Koob & Nora Volkow. *Neurobiology of addiction: a neurocircuitry analysis*, 3 (8) *Lancet Psychiatry* 760-773 (2016), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6135092/pdf/nihms-985499.pdf>.

<sup>73</sup> Fulton Crews et al., *Adolescent cortical development: a critical period of vulnerability for addiction*, 86 *Pharmacology, Biochemistry and Behavior* 189-199 (2007), <https://www.sciencedirect.com/science/article/pii/S009130570600400X>.

<sup>74</sup> See Kevin Hurler, *For Sites Like Instagram and Twitter, Imitation Is the Only Form of Flattery*, *Gizmodo* (Aug. 16, 2022), <https://gizmodo.com/instagram-tiktok-snapchat-facebook-meta-1849395419> (“Over the last decade, some of the most popular social media apps have blatantly ripped off features from some of the other most popular social media apps, in a tech version of Capture the Flag where the only losers are the users who are forced to persist through this cat-and-mouse game.”).

1 hearts, comments, shares, or reposts. This section explains the psychological and social  
2 mechanisms exploited by these and other product defects.

3 91. *First*, Defendants' apps are designed and engineered to methodically, but  
4 unpredictably, space out dopamine-triggering rewards with dopamine gaps. The unpredictability is  
5 key because, paradoxically, intermittent variable rewards (or "IVR") create stronger associations  
6 (conditioned changes in the neural pathway) than fixed rewards. Products that use this technique  
7 are highly addictive or habit forming.

8 92. IVR is based on insights from behavioral science dating back to research in the  
9 1950s by Harvard psychologist B. F. Skinner. Skinner found that laboratory mice respond most  
10 voraciously to unpredictable rewards. In one famous experiment, mice that pushed a lever received  
11 a variable reward (a small treat, a large treat, or no treat at all). Compared with mice who received  
12 the same treat every time, the mice who received only occasional rewards were more likely to  
13 exhibit addictive behaviors such as pressing the lever compulsively. This exploitation of neural  
14 circuitry is exactly how addictive products like slot machines keep users coming back.

15 93. The IVR aspect of slot machines is limited by the fact that they deliver rewards in a  
16 randomized manner, irrespective of the person pulling the lever. By contrast, Defendants' apps are  
17 designed to purposely withhold and release rewards on a schedule its algorithms have determined  
18 is optimal to heighten a specific user's craving and keep them using the product. For example,  
19 TikTok will at times delay a video it knows a user will like until the moment before it anticipates  
20 the user would otherwise log out. Instagram's notification algorithm will at times determine that a  
21 particular user's engagement will be maximized if the app withholds "Likes" on their posts and  
22 then later delivers them in a large burst of notifications.

23 94. Defendants' use of IVR is particularly effective on and dangerous for adolescents,  
24 given the incomplete aspects of their brain maturation described above—including lack of impulse  
25 control and reduced executive functions.

26 95. There are multiple types of dopamine neurons that are connected with distinct brain  
27 networks and have distinct roles in motivational control. Apart from the dopamine reward loop  
28 triggered by positive feedback, other dopamine neurons are impacted by salient but non-rewarding

1 stimuli and even painful-aversive stimuli.<sup>75</sup> Defendants’ apps capitalize on this by algorithmically  
 2 ranking photos and videos that “engage” users because they present a dopamine pay-off, including  
 3 novel, aversive, and alarming images.

4 96. *Second*, there are multiple types of dopamine neurons that are connected with  
 5 distinct brain networks and have distinct roles in motivational control. Apart from the dopamine  
 6 reward loop triggered by positive feedback, other dopamine neurons are impacted by salient but  
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 8 algorithmically ranking photos and videos that “engage” users because they present a dopamine  
 9 pay-off, including novel, aversive, and alarming images.

10 97. *Third*, dangerous and defective features in Defendants’ apps manipulate young users  
 11 through their exploitation of “reciprocity”—the psychological phenomenon by which people  
 12 respond to positive or hostile actions in kind. Reciprocity means that people respond in a friendly  
 13 manner to friendly actions, and with negative retaliation to hostile actions.<sup>77</sup> Phillip Kunz best  
 14 illustrated the powerful effect of reciprocity through an experiment using holiday cards. Kunz sent  
 15 cards to a group of complete strangers, including pictures of his family and a brief note.<sup>78</sup> People  
 16 whom he had never met or communicated with before reciprocated, flooding him with holiday  
 17 cards in return.<sup>79</sup> Most of the responses did not even ask Mr. Kunz who he was—they simply  
 18 responded to his initial gesture with a reciprocal action.<sup>80</sup>

19 98. Products like Instagram and Snapchat exploit reciprocity by, for example,  
 20 automatically telling a sender when their message is seen, instead of letting the recipient avoid

21 <sup>75</sup> J.P.H. Verharen, Yichen Zhu, and Stephan Lammel *Aversion hot spots in the dopamine system*  
 22 64 *Neurobiology* 46-52 (March 5, 2020) <https://doi.org/10.1016/j.conb.2020.02.002>.

23 <sup>76</sup> J.P.H. Verharen, Yichen Zhu, and Stephan Lammel *Aversion hot spots in the dopamine system*  
 64 *Neurobiology* 46-52 (March 5, 2020) <https://doi.org/10.1016/j.conb.2020.02.002>.

24 <sup>77</sup> Ernst Fehr & Simon Gächter, *Fairness and Retaliation: The Economics of Reciprocity*, 14(3) *J.*  
 25 *Econ. Persps.* 159–81 (2000), [https://www.researchgate.net/profile/Ernst-Fehr-2/publication/23756527\\_Fairness\\_and\\_Retaliation\\_The\\_Economics\\_of\\_Reciprocity/links/5eb024e945851592d6b87d3b/Fairness-and-Retaliation-The-Economics-of-Reciprocity.pdf](https://www.researchgate.net/profile/Ernst-Fehr-2/publication/23756527_Fairness_and_Retaliation_The_Economics_of_Reciprocity/links/5eb024e945851592d6b87d3b/Fairness-and-Retaliation-The-Economics-of-Reciprocity.pdf).

26 <sup>78</sup> Phillip R. Kunz & Michael Woolcott, *Season’s Greetings: From my status to yours*, 5(3) *Soc.*  
*Sci. Rsch.* 269–78 (Sept. 1976), [https://doi.org/10.1016/0049-089X\(76\)90003-X](https://doi.org/10.1016/0049-089X(76)90003-X).

27 <sup>79</sup> Phillip R. Kunz & Michael Woolcott, *Season’s Greetings: From my status to yours*, 5(3) *Soc.*  
*Sci. Rsch.* 269–78 (Sept. 1976), [https://doi.org/10.1016/0049-089X\(76\)90003-X](https://doi.org/10.1016/0049-089X(76)90003-X).

28 <sup>80</sup> Phillip R. Kunz & Michael Woolcott, *Season’s Greetings: From my status to yours*, 5(3) *Soc.*  
*Sci. Rsch.* 269–78 (Sept. 1976), [https://doi.org/10.1016/0049-089X\(76\)90003-X](https://doi.org/10.1016/0049-089X(76)90003-X).



disclosing whether it was viewed. Consequently, the recipient feels more obligated to respond immediately, keeping users on the product.<sup>81</sup>

99. *Fourth*, Defendants’ apps addict young users by preying on their already-heightened need for social comparison and interpersonal feedback-seeking.<sup>82</sup> Because of their relatively undeveloped prefrontal cortex, young people are already predisposed to status anxieties, beauty comparisons, and a desire for social validation.<sup>83</sup> Defendants’ apps encourage repetitive usage by dramatically amplifying those insecurities.

100. Mitch Prinstein, Chief Science Officer for the American Psychology Association, has explained that online and real-world interactions are fundamentally different.<sup>84</sup> For example, in the real world, no public ledger tallies the number of consecutive days friends speak. Similarly, “[a]fter you walk away from a regular conversation, you don’t know if the other person liked it, or if anyone else liked it.”<sup>85</sup> By contrast, a product defect like the “Snap Streak” creates exactly such artificial forms of feedback.<sup>86</sup> On Defendants’ apps, friends and even complete strangers can deliver (or withhold) dopamine-laced likes, comments, views, or follows.<sup>87</sup>

101. The “Like” on Facebook, Instagram, TikTok, and YouTube or other comparable features common to Defendants’ products has an especially powerful effect on teenagers and can

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<sup>81</sup> Von Tristan Harris, *The Slot Machine in Your Pocket*, Spiegel Int’l (July 27, 2016), <https://www.spiegel.de/international/zeitgeist/smartphone-addiction-is-part-of-the-design-a-1104237.html>.

<sup>82</sup> Jacqueline Nesi & Mitchell J Prinstein, *Using Social Media for Social Comparison and Feedback-Seeking: Gender and Popularity Moderate Associations with Depressive Symptoms*, 43 J. Abnormal Child Psych. 1427–38 (2015), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5985443/>.

<sup>83</sup> Susan Harter, *The Construction of the Self: Developmental and Sociocultural Foundations* (Guilford Press, 2d ed., 2012) (explaining how, as adolescents move toward developing cohesive self-identities, they typically engage in greater levels of social comparison and interpersonal feedback-seeking).

<sup>84</sup> Zara Abrams, *Why young brains are especially vulnerable to social media*, Am. Psych. Ass’n (Aug. 25, 2022), <https://www.apa.org/news/apa/2022/social-media-children-teens>.

<sup>85</sup> Zara Abrams, *Why young brains are especially vulnerable to social media*, Am. Psych. Ass’n (Aug. 25, 2022), <https://www.apa.org/news/apa/2022/social-media-children-teens>.

<sup>86</sup> A “Snap Streak” is designed to measure a user’s Snapchat activity with another user. Two users achieve a “Snap Streak” when they exchange at least one Snap in three consecutive 24-hour periods. When successively longer “Streaks” are achieved, users are rewarded with varying tiers of emojis.

<sup>87</sup> Zara Abrams, *Why young brains are especially vulnerable to social media*, Am. Psych. Ass’n (Aug. 25, 2022), <https://www.apa.org/news/apa/2022/social-media-children-teens>.

neurologically alter their perception of online posts. Researchers at UCLA used magnetic resonance imaging to study the brains of teenage girls as they used Instagram. They found that girls' perception of a photo changed depending on the number of likes it had generated.<sup>88</sup> That an image was highly liked—regardless of its content—instinctively caused the girls to prefer it. As the researchers put it, teens react to perceived “endorsements,” even if likes on social media are often fake, purchased, or manufactured.<sup>89</sup>

102. The design of Defendants' apps also encourages unhealthy, negative social comparisons, which in turn cause body image issues and related mental and physical disorders. Given adolescents' naturally vacillating levels of self-esteem, they are already predisposed to comparing “upward” to celebrities, influencers, and peers they perceive as more popular.<sup>90</sup> Defendants' apps turbocharge this phenomenon. On Defendants' apps, users disproportionately post “idealized” content,<sup>91</sup> misrepresenting their lives. That is made worse by appearance-altering filters built into Defendants' apps, which underscore conventional (and often racially biased) standards of beauty, by allowing users to remove blemishes, make bodies and faces appear thinner, and lighten skin-tone. Defendants' apps provide a continuous stream of these filtered and fake

<sup>88</sup> Lauren E. Sherman et al., *The Power of the Like in Adolescence: Effects of Peer Influence on Neural and Behavioral Responses to Social Media*, 27(7) Psychol Sci. 1027 (2016), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5387999/>

<sup>89</sup> Lauren E. Sherman et al., *The Power of the Like in Adolescence: Effects of Peer Influence on Neural and Behavioral Responses to Social Media*, 27(7) Psychol Sci. 1027 (2016), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5387999/>; see also Stuart Wolpert, *The teenage brain on social media*, UCLA Newsroom (May 31, 2016), <https://newsroom.ucla.edu/releases/the-teenage-brain-on-social-media>.

<sup>90</sup> Jacqueline Nesi & Mitchell J Prinstein, *Using Social Media for Social Comparison and Feedback-Seeking: Gender and Popularity Moderate Associations with Depressive Symptoms*, 43 J. Abnormal Child Psych. 1427–38 (2015), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5985443/> (“Upward comparison occurs when people compare themselves to someone they perceive to be superior[ ], whereas a downward comparison is defined by making a comparison with someone perceived to be inferior[.]”); Jin-Liang wang, Hai-Zhen Wang, James Gaskin, & Skyler Hawk, *The Mediating Roles of Upward Social Comparison and Self-esteem and the Moderating Role of Social Comparison Orientation in the Association between Social Networking Site Usage and Subjective Well-Being*, *Frontiers in Psychology* (May 2017), [https://www.frontiersin.org/articles/10.3389/fpsyg.2017.00771/full#:~:text=Social%20compariso n%20can%20be%20upward,inferior%20\(Wills%2C%201981\)](https://www.frontiersin.org/articles/10.3389/fpsyg.2017.00771/full#:~:text=Social%20compariso n%20can%20be%20upward,inferior%20(Wills%2C%201981)).

<sup>91</sup> Jacqueline Nesi & Mitchell J Prinstein, *Using Social Media for Social Comparison and Feedback-Seeking: Gender and Popularity Moderate Associations with Depressive Symptoms*, 43 J. Abnormal Child Psych. 1427–38 (2015), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5985443/>;

appearances and experiences.<sup>92</sup> That encourages harmful body image comparisons by adolescents, who begin to negatively perceive their own appearance and believe their bodies, and indeed their lives, are comparatively worse.<sup>93</sup>

103. *Fifth*, Defendants' respective product features work in combination to create and maintain a user's "flow-state": a hyper-focused, hypnotic state, where bodily movements are reflexive and the user is totally immersed in smoothly rotating through aspects of the social media product.<sup>94</sup>

104. As discussed in more detail below, defective features like the ones just described can cause or contribute to the following injuries in young people: eating and feeding disorders; depressive disorders; anxiety disorders; sleep disorders; trauma- and stressor-related disorders; obsessive-compulsive and related disorders; disruptive, impulse-control, and conduct disorders; suicidal ideation; self-harm; and suicide.<sup>95</sup>

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<sup>92</sup> Jin Kyun Lee, *The Effects of Social Comparison Orientation on Psychological Well-Being in Social Networking Sites: Serial Mediation of Perceived Social Support and Self-Esteem*, Current Psychology (2020), <https://link.springer.com/content/pdf/10.1007/s12144-020-01114-3.pdf>.

<sup>93</sup> Jin Kyun Lee, *The Effects of Social Comparison Orientation on Psychological Well-Being in Social Networking Sites: Serial Mediation of Perceived Social Support and Self-Esteem*, Current Psychology (2020), <https://link.springer.com/content/pdf/10.1007/s12144-020-01114-3.pdf>. See also Nino Gugushvili et al., *Facebook use intensity and depressive symptoms: a moderated mediation model of problematic Facebook use, age, neuroticism, and extraversion at 3*, BMC Psych. 10, 279 (2022), <https://doi.org/10.1186/s40359-022-00990-7> (explaining that youth are particularly vulnerable because they "use social networking sites for construing their identity, developing a sense of belonging, and for comparison with others"); Jin Lee, *The effects of social comparison orientation on psychological well-being in social networking sites: serial mediation of perceived social support and self-esteem*, 41 Current Psychology 6247-6259 (2022), <https://doi.org/10.1007/s12144-020-01114-3>.

<sup>94</sup> See e.g., *What Makes TikTok so Addictive?: An Analysis of the Mechanisms Underlying the World's Latest Social Media Craze*, Brown Undergraduate J. of Pub. Health (2021), <https://sites.brown.edu/publichealthjournal/2021/12/13/tiktok/> (describing how IVR and infinite scrolling may induce a flow state in users).

<sup>95</sup> E.g., Nino Gugushvili et al., *Facebook use intensity and depressive symptoms: a moderated mediation model of problematic Facebook use, age, neuroticism, and extraversion at 3*, BMC Psych. 10, 279 (2022), <https://doi.org/10.1186/s40359-022-00990-7> (collecting sources).



1                   **3.     Millions of kids use Defendants’ products compulsively.**

2           105. Defendants have been staggeringly successful in their efforts to attract young users  
3 to their apps. In 2021, 32% of 7- to 9-year-olds,<sup>96</sup> 49% of 10- to 12-year-olds,<sup>97</sup> and 90% of 13- to  
4 17-year-olds in the United States used social media.<sup>98</sup> A majority of U.S. teens use Instagram,  
5 TikTok, Snapchat, and/or YouTube. Thirty-two percent say they “wouldn’t want to live without”  
6 YouTube, while 20% said the same about Snapchat, and 13% said the same about both TikTok and  
7 Instagram.<sup>99</sup>

8           106. U.S. teenagers who use Defendants’ products are likely to use them every day.  
9 Sixty-two percent of U.S. children ages 13-18 use social media daily.<sup>100</sup> And daily use often means  
10 constant use. About one-in-five U.S. teens visit or use YouTube “almost constantly,” while about  
11 one-in-six report comparable usage of Instagram.<sup>101</sup> Nearly half of U.S. teens use TikTok at least

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17 <sup>96</sup> *Sharing Too Soon? Children and Social Media Apps*, C.S. Mott Child’s Hosp. Univ. Mich.  
Health (Oct. 18, 2021),

18 [https://mottpoll.org/sites/default/files/documents/101821\\_SocialMedia.pdf](https://mottpoll.org/sites/default/files/documents/101821_SocialMedia.pdf).

19 <sup>97</sup> *Sharing Too Soon? Children and Social Media Apps*, C.S. Mott Child’s Hosp. Univ. Mich.  
Health (Oct. 18, 2021),

20 [https://mottpoll.org/sites/default/files/documents/101821\\_SocialMedia.pdf](https://mottpoll.org/sites/default/files/documents/101821_SocialMedia.pdf).

21 <sup>98</sup> *Social Media and Teens*, Am. Acad. Child & Adolescent Psychiatry (Mar. 2018),  
[https://www.aacap.org/AACAP/Families\\_and\\_Youth/Facts\\_for\\_Families/FFF-Guide/Social-Media-and-Teens-100.aspx](https://www.aacap.org/AACAP/Families_and_Youth/Facts_for_Families/FFF-Guide/Social-Media-and-Teens-100.aspx); see also Victoria Rideout et al., *The Common Sense Census: Media Use by Tweens and Teens*, 2021 at 5, Common Sense Media (2022),

22 [https://www.common sense media.org/sites/default/files/research/report/8-18-census-integrated-report-final-web\\_0.pdf](https://www.common sense media.org/sites/default/files/research/report/8-18-census-integrated-report-final-web_0.pdf).

23 <sup>99</sup> Victoria Rideout et al., *Common Sense Census: Media use by tweens and teens*, 2021 at 31,  
Common Sense Media (2022),

24 [https://www.common sense media.org/sites/default/files/research/report/8-18-census-integrated-report-final-web\\_0.pdf](https://www.common sense media.org/sites/default/files/research/report/8-18-census-integrated-report-final-web_0.pdf).

25 <sup>100</sup> Victoria Rideout et al., *Common Sense Census: Media use by tweens and teens*, 2021 at 31,  
Common Sense Media (2022),

26 [https://www.common sense media.org/sites/default/files/research/report/8-18-census-integrated-report-final-web\\_0.pdf](https://www.common sense media.org/sites/default/files/research/report/8-18-census-integrated-report-final-web_0.pdf).

27 <sup>101</sup> Emily Vogels et al., *Teens, Social Media and Technology 2022*, Pew Rsch. Ctr. (Aug. 10,  
28 2022), <https://www.pewresearch.org/internet/2022/08/10/teens-social-media-and-technology-2022/>.

1 “several times a day.”<sup>102</sup> In one study, U.S. teenage users reported checking Snapchat thirty times  
2 a day on average.<sup>103</sup>

3 107. Teenagers know they are addicted to Defendants’ products: 36% admit they spend  
4 too much time on social media.<sup>104</sup> Yet they can’t stop. Of the teens who use at least one social  
5 media product “almost constantly,” 71% say quitting would be hard. Nearly one-third of this  
6 population—and nearly one-in-five of *all* teens—say quitting would be “very hard.”<sup>105</sup>

7 108. Notably, the more teens use Defendants’ apps, the harder it is to quit. Teens who  
8 say they spend too much time on social media are almost twice as likely to say that giving up social  
9 media would be hard, compared to teens who see their social media usage as about right.<sup>106</sup>

10 109. Despite using social media frequently, most young people don’t particularly enjoy  
11 it. In 2021, only 27% of boys and 42% of girls ages 8-18 reported liking social media “a lot.”<sup>107</sup>  
12 Moreover, one survey found that young people think social media is the main reason youth mental  
13 health is getting worse.<sup>108</sup> About twice as many of the surveyed youth believed that social media is

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17 <sup>102</sup> Emily Vogels et al., *Teens, Social Media and Technology 2022*, Pew Rsch. Ctr. (Aug. 10, 2022), <https://www.pewresearch.org/internet/2022/08/10/teens-social-media-and-technology-2022/>.

18 <sup>103</sup> Erinn Murphy et al., *Taking Stock with Teens, Fall 2021* at 13, Piper Sandler (2021), <https://tinyurl.com/89ct4p88>; see also Emily Vogels et al., *Teens, Social Media and Technology 2022*, Pew Rsch. Ctr. (Aug. 10, 2022), <https://www.pewresearch.org/internet/2022/08/10/teens-social-media-and-technology-2022/>.

20 <sup>104</sup> Emily Vogels et al., *Teens, Social Media and Technology 2022*, Pew Rsch. Ctr. (Aug. 10, 2022), <https://www.pewresearch.org/internet/2022/08/10/teens-social-media-and-technology-2022/>.

22 <sup>105</sup> Emily Vogels et al., *Teens, Social Media and Technology 2022*, Pew Rsch. Ctr. (Aug. 10, 2022), <https://www.pewresearch.org/internet/2022/08/10/teens-social-media-and-technology-2022/>.

24 <sup>106</sup> Emily Vogels et al., *Teens, Social Media and Technology 2022*, Pew Rsch. Ctr. (Aug. 10, 2022), <https://www.pewresearch.org/internet/2022/08/10/teens-social-media-and-technology-2022/>.

25 <sup>107</sup> Victoria Rideout et al., *Common Sense Census: Media use by tweens and teens, 2021* at 34, Common Sense Media (2022), [https://www.commonsensemedia.org/sites/default/files/research/report/8-18-census-integrated-report-final-web\\_0.pdf](https://www.commonsensemedia.org/sites/default/files/research/report/8-18-census-integrated-report-final-web_0.pdf).

27 <sup>108</sup> *Headspace (2018) National youth mental health survey 2018*, National Youth Mental Health  
28 Foundation (2018), <https://headspace.org.au/assets/headspace-National-Youth-Mental-Health-Survey-2018.pdf>

the main reason for declining mental health than the next likely cause, and over *seven times* more believed it to be the main cause rather than drugs and alcohol.<sup>109</sup>

**4. Defendants’ defective products encourage dangerous “challenges.”**

110. Dangerous “viral” challenges are one particularly pernicious result of the defective design of Defendants’ apps. “Online challenges or dares typically involve people recording themselves doing something difficult, which they share online to encourage others to repeat.”<sup>110</sup> These challenges often generate significant engagement—sometimes millions of likes or views—and resulting social rewards to the users who post videos of themselves carrying out the challenges. Predictably, a substantial portion of online challenges—created for the purpose of generating social rewards—are very dangerous.

111. For example, one common social media challenge is the “Blackout Challenge,” where youth are encouraged to make themselves faint by holding their breath and constricting their chest muscles, or by restricting airflow with a ligature around their neck. This challenge is dangerous because, should the participant fail to remove the ligature around their neck prior to fainting, they may strangle themselves. Similarly, an “I Killed Myself” challenge involves participants faking their own deaths to record their family members’ reactions upon believing their loved one has died. This challenge is dangerous because certain methods of participating can actually kill (or inflict catastrophic injury) on participants. Likewise, the game Russian Roulette—in which a participant loads a revolver with a single bullet, spins the chamber until it falls on a random slot, and then shoots themselves—has taken on new life as a social media challenge.

112. Again, these injuries and deaths are a foreseeable consequence of Defendants’ addictive product designs. Many other addictive products cause injury or death because neuroadaptation causes addicts to use increasingly extreme methods to maintain dopamine levels. That compulsive use of social media would do the same was, at all relevant times, foreseeable,

<sup>109</sup> *Headspace National Youth Mental Health Survey 2018*, National Youth Mental Health Foundation (2018), <https://headspace.org.au/assets/headspace-National-Youth-Mental-Health-Survey-2018.pdf> (surveying more than 4,000 Australians ages 12-25).

<sup>110</sup> TikTok, *Online Challenges*, <https://www.tiktok.com/safety/en-us/online-challenges/>..

1 particularly as to young users whose abilities to assess risks, make wise decisions, and regulate  
2 their responses to perceived social needs are still developing.

3 113. Defendants are perfectly aware of the foreseeable risks to youth presented by their  
4 apps’ “viral” promotion of dangerous challenges.

5 114. Defendants have encouraged the viral challenge phenomenon in spite of the fact that  
6 their encouragement furthers dangerous challenges themselves and a broader ecosystem in which  
7 those dangerous challenges occur.

8 115. Meta, TikTok, and YouTube use engagement-optimized algorithms to control users’  
9 main feeds. Such algorithms spread extreme content as a consequence of its propensity to generate  
10 engagement. That design defect foreseeably leads to dangerous challenges spreading easily on these  
11 Defendants’ platforms.

12 116. Defendants have further encouraged challenges in other ways. ByteDance regularly  
13 creates overlays and filters that facilitate viral challenges. It offers advertisers the ability to launch  
14 Branded Hashtag Challenges and promotes them on user feeds.<sup>111</sup> It boasts that challenges are  
15 “geared towards building awareness and engagement,” and that “research shows that they can  
16 deliver strong results”—i.e., increased return on ad spending—“at every stage of the funnel.” This,  
17 in turn, generates advertising revenue for ByteDance.

18 117. Snap also promotes viral challenges through Snapchat’s Snap Spotlight feature. It  
19 gives cash prizes to challenge participants whose challenges receive the most views on Snap  
20 Spotlight.<sup>112</sup> It has also created overlays that encourage challenges—such as a Speed Filter,  
21 showing how fast a given user was going at the time they took a particular Snap.<sup>113</sup> Other  
22 Defendants have also promoted viral challenges based on a recognition that such challenges drive  
23 engagement and advertising revenue.

24  
25 <sup>111</sup> TikTok for Business, *Branded Hashtag Challenge: Harness the Power of Participation* (Mar.  
26 16, 2022), [https://www.tiktok.com/business/en-US/blog/branded-hashtag-challenge-harness-the-  
power-of-participation](https://www.tiktok.com/business/en-US/blog/branded-hashtag-challenge-harness-the-power-of-participation).

27 <sup>112</sup> “Snapchat adds ‘challenges’ with cash prizes to its TikTok competitor,” *The Verge*, Oct. 6,  
28 2021, [https://www.theverge.com/2021/10/6/22711632/snapchat-spotlight-challenges-announced-  
cash-prizes-tiktok](https://www.theverge.com/2021/10/6/22711632/snapchat-spotlight-challenges-announced-cash-prizes-tiktok).

<sup>113</sup> *See Lemmon v. Snap, Inc.*, 995 F.3d 1085, 1085 (9th Cir. 2021).

1                   5.     **Defendants’ defective social media apps facilitate and contribute to the**  
 2                   **sexual exploitation and sextortion of children, and the ongoing**  
 3                   **production and spread of child sex abuse material online.**

4           118.   It is well documented that sexual predators use Defendants’ products to target and  
 5           exploit minors. They are drawn to social media because it provides them with easy access to a large  
 6           pool of potential victims, many of whom are addicted to Defendants’ products. On February 7,  
 7           2023, for example, the FBI and international law enforcement agencies issued a joint warning about  
 8           the global “financial sextortion crisis” which stated: “Financial sextortion can happen anywhere,  
 9           although it mainly occurs on the digital platforms where children are already spending their screen  
 10          time, like social media and gaming websites, or video chat applications. On these platforms,  
 11          predators often pose as girls of a similar age and use fake accounts to target young boys, deceiving  
 12          them into sending explicit photos or videos. The predator then threatens to release the  
 13          compromising materials unless the victim sends payment, however, in many cases, the predator  
 14          will release the images anyway.”<sup>114</sup>

15          119.   Rather than mitigate the risk of sexual exploitation and harm to children and teens  
 16          on their products, Defendants have facilitated and exacerbated it by implementing defective product  
 17          features that help sexual predators connect with children. Defendants’ products are designed in  
 18          unsafe ways—including, as to some or all Defendants, flawed age verification, lack of meaningful  
 19          mechanisms to prevent sham accounts, default-public profiles, matching and recommending  
 20          connections between adults and minors, promoting unsolicited messages and interactions from  
 21          adults, and wholly inadequate and ineffective parental controls, among others—that allow children  
 22          to be easily identified, targeted, accessed, and exploited.

23          120.   Compounding the problem, Defendants routinely fail to report abuse. Steve Grocki,  
 24          the U.S. Department of Justice’s Chief of the Criminal Division’s Child Exploitation & Obscenity  
 25          Section, put it this way: “A lot of times, someone has come across something problematic and the  
 26          platform isn’t doing anything[.]” He went on to say, “[t]hese reports can be of great value because  
 27          they signal where there are big problems and we can flag those issues to Internet companies, such

28          <sup>114</sup> International Law Enforcement Agencies Issue Joint Warning about global financial sextortion crisis, FBI (2023), <https://www.fbi.gov/news/press-releases/international-law-enforcement-agencies-issue-joint-warning-about-global-financial-sextortion-crisis>.

1 as when products are being exploited by offenders, they aren't meeting reporting requirements, or  
 2 when children under the age restriction are accessing inappropriate content.”<sup>115</sup>

3 121. By failing to implement adequate age and identity verification on the products,  
 4 Defendants knowingly and foreseeably place children in the pathways of sexual predators, who  
 5 utilize their products and exploit their defective design features. Age verification on Defendants’  
 6 products can be defective for a variety of reasons, including:

- 7 a. Inaccurate information: Users can easily enter false information, such as a  
 8 fake date of birth, to bypass age restrictions;
- 9 b. No measures to prevent sham accounts: Defendants’ products are structured  
 10 so that users can easily create multiple accounts under different names and  
 11 ages; and
- 12 c. Incomplete implementation: Defendants’ products only partially implement  
 13 age verification, such as requiring users to provide their date of birth but not  
 14 verifying it through any means.

15 122. To be sure, Defendants possess the technology to identify minors who are posing as  
 16 adults and adults who are posing as minors, but they do not use this information to identify violative  
 17 accounts and remove them from their products.

18 123. For example, by making minors’ profiles public by default, certain Defendants have  
 19 supplied sexual predators with detailed background information about children, including their  
 20 friends, activities, interests, and even location. By providing this information, these Defendants put  
 21 children at risk of being approached and befriended by sexual predators. These young targets had  
 22 no idea that their posts, friends, pictures, and general online sharing represented a windfall of  
 23 information that a predator could use to sexually exploit or abuse them.

24 124. Meta, ByteDance, and Google are aware of these very real risks that public-by-  
 25 default accounts for minors can cause by leaving minors broadly exposed to adult strangers, and  
 26

27  
 28 <sup>115</sup> Equality Now, *Steve Grocki Expert Interview - United States* (Nov. 15, 2021),  
<https://www.equalitynow.org/stories/steve-grocki-expert-interview-united-states/>.

1 yet have only recently (in response to litigation) begun to create default privacy settings for youth  
2 accounts—even though they have been aware of these harmful interactions for years.

3 125. Defendants have also lagged behind in restricting who can reach minor users  
4 through Direct Message features.

5 126. Defendants’ parental controls are also defective in giving parents effective control  
6 over their children’s online activity, which can lead to kids connecting with predators. These defects  
7 take several forms:

- 8 a. Limited scope: parental control tools only partially cover a child’s activity,  
9 leaving gaps that predators can exploit;
- 10 b. Inadequate monitoring: parental control tools do not provide real-time  
11 monitoring of a child’s activity, meaning that harmful interactions with  
12 predators go unnoticed;
- 13 c. Lack of customization: parents are not able to fully customize their parental  
14 control settings to meet the specific needs of their family and children,  
15 leaving them with a one-size-fits-all solution that is wholly ineffective in  
16 preventing connections with predators; and
- 17 d. Opt-in format: parental control tools that require parents to affirmatively link  
18 to their child’s account are futile when parents are not notified that their  
19 minor child has opened an account on the platform in the first place.

20 127. Defendants are well aware that vulnerable young users—whom Defendants induce  
21 to spend large amounts of time on their products, through a powerful combination of algorithmic  
22 recommendations and addictive features designed to make it hard for a user to disengage—are  
23 uniquely susceptible to grooming by seasoned sexual predators. Research shows that young users  
24 are heavily reliant on their social connections—exploring and shaping their identity through their  
25 social relationships.

26 128. Defendants’ defective product features have benefited sexual predators in many  
27 other ways as well. For example, sexual predators leverage Defendants’ use of ephemeral,  
28 “disappearing” technology to assure young users that there is no risk to them sending a sexual photo



1 or video. Trusting young users are then horrified to discover that these videos have been captured  
 2 by predators and then circulated to their own friends and contacts or other sexual predators. In some  
 3 severe cases, young users find themselves in the nightmarish scheme known as “sextortion,” where  
 4 a predator threatens to circulate the sexual images of the minor unless the predator is paid to keep  
 5 the images under wraps. Law enforcement agencies across the country report that this scheme has  
 6 become pervasive on Defendants’ products.

7 **C. META MARKETS AND DESIGNS FACEBOOK AND INSTAGRAM TO**  
 8 **ADDICT YOUNG USERS, SUBSTANTIALLY CONTRIBUTING TO THE**  
 9 **MENTAL HEALTH CRISIS**

10 **1. Background and overview of Meta’s products.**

11 129. Meta operates and designs Facebook and Instagram, two of the world’s most popular  
 12 social media products. In 2022, two billion users worldwide were active on Instagram each month,  
 13 and almost three billion were monthly active users of Facebook.<sup>116</sup> This enormous reach has been  
 14 accompanied by enormous damage for adolescent users.

15 130. Meta understands that its products are used by kids under 13. It understands that its  
 16 products are addictive. It understands that addictive use leads to problems. And it understands that  
 17 these problems can be so extreme as to include encounters between adults and minors—and driven  
 18 largely by a single product defect.<sup>117</sup>

19 131. Despite this knowledge, and rather than stand up a five-alarm effort to stop the  
 20 problems created by its products, Meta has abjectly failed at protecting child users of Instagram  
 21 and Facebook.

22 132. Meta has done next to nothing. And its reason was simple: growth. Taking action  
 23 would lower usage of (and therefore lower profits earned from) a critical audience segment.

24 133. Meta’s frequent gestures towards youth safety were never serious and always driven  
 25 by public relations: Meta offered tools to kids and parents, like “time spent,” that it knew presented  
 26 false data. At the same time, Meta engaged in a cynical campaign to counter-message around the

27 <sup>116</sup> Alex Barinka, *Meta’s Instagram Users Reach 2 Billion, Closing In on Facebook*, Bloomberg  
 28 (Oct. 26, 2022), <https://www.bloomberg.com/news/articles/2022-10-26/meta-s-instagram-users-reach-2-billion-closing-in-on-facebook>.

<sup>117</sup> This defect, “People You May Know,” allows adults to connect with minors on Facebook and Instagram.



addiction narrative by discrediting existing research as completely made up. Meta knew better. Indeed, both Zuckerberg and Instagram CEO Adam Mosseri heard firsthand from a leading researcher that Instagram and Facebook posed unique dangers to young people.

**b. Facebook's acquisition and control of Instagram.**

134. On or around April 6, 2012, Zuckerberg called Kevin Systrom, one of the co-founders of Instagram, offering to purchase his company.<sup>118</sup>

135. Instagram launched as a mobile-only app that allowed users to create, filter, and share photos. On the first day of its release in October 2010, it gained a staggering 25,000 users.<sup>119</sup> By April 2012, Instagram had approximately 27 million users. When Instagram released an Android version of its app—right around the time of Zuckerberg's call—it was downloaded more than a million times in less than a day.<sup>120</sup> Instagram's popularity is so widespread and image-based, a new term has grown up around it for the perfect image or place: "Instagrammable."<sup>121</sup>

136. On April 9, 2012, just days after Zuckerberg's overture to Systrom, Facebook, Inc. purchased Instagram, Inc. for \$1 billion in cash and stock. This purchase price was double the valuation of Instagram implied by a round of funding the company closed days earlier.<sup>122</sup>

137. Facebook, Inc. held its initial public offering less than two months after acquiring Instagram, Inc.<sup>123</sup>

<sup>118</sup> Nicholas Carlson, *Here's The Chart That Scared Zuckerberg Into Spending \$1 Billion On Instagram*, Insider (Apr. 14, 2012), <https://www.businessinsider.com/heres-the-chart-that-scared-zuckerberg-into-spending-1-billion-on-instagram-2012-4>.

<sup>119</sup> Dan Blystone, *Instagram: What It Is, Its History, and How the Popular App Works*, Investopedia (Oct. 22, 2022), <https://www.investopedia.com/articles/investing/102615/story-instagram-rise-1-photo0sharing-app.asp#:~:text=History%20of%20Instagram>.

<sup>120</sup> Kim-Mai Cutler, *From 0 to \$1 billion in two years: Instagram's rose-tinted ride to glory*, TechCrunch (Apr. 9, 2012), <https://techcrunch.com/2012/04/09/instagram-story-facebook-acquisition/>.

<sup>121</sup> Sarah Frier, *No Filter* 81 (2020).

<sup>122</sup> Alexia Tsotsis, *Right Before Acquisition, Instagram Closed \$50M At A \$500M Valuation From Sequoia, Thrive, Greylock And Benchmark*, TechCrunch (Apr. 9, 2012), <https://techcrunch.com/2012/04/09/right-before-acquisition-instagram-closed-50m-at-a-500m-valuation-from-sequoia-thrive-greylock-and-benchmark/>.

<sup>123</sup> Evelyn Rusli & Peter Eavis, *Facebook Raises \$16Billion in I.P.O.*, N.Y. Times (May 17, 2012), <https://archive.nytimes.com/dealbook.nytimes.com/2012/05/17/facebook-raises-16-billion-in-i-p-o/>.

138. Zuckerberg's willingness to pay a premium for Instagram was driven by his instinct that Instagram would be vital to reaching a younger, smartphone-oriented audience—and thus critical to his company's going-forward success.

139. This was prescient. Instagram's revenue grew exponentially from 2015 to 2022.<sup>124</sup> A study conducted in the second quarter of 2018 showed that, over the prior year, advertisers' spending on Instagram grew by 177%—more than four times the growth of ad spending on Facebook.<sup>125</sup> Likewise, visits to Instagram rose by 236%, nearly *thirty* times the growth in site visits experienced by Facebook during the same period.<sup>126</sup> By 2021, Instagram accounted for over half of Meta's \$50.3 billion in net advertising revenues.<sup>127</sup>

140. Meta has claimed credit for Instagram's success since its acquisition. Zuckerberg told market analysts that Instagram “wouldn't be what it is without everything that we put into it, whether that's the infrastructure or our advertising model.”<sup>128</sup>

141. Instagram has become the most popular photo-sharing social media product among teenagers and young adults in the United States. 62% of American teens use Instagram, with 10%

<sup>124</sup> See Josh Constine, *Instagram Hits 1 Billion Monthly Users, Up From 800M in September*, TechCrunch (June 20, 2018), <https://techcrunch.com/2018/06/20/instagram-1-billion-users/> (showing meteoric rise in monthly active users over period and reporting year-over-year revenue increase of 70% from 2017-2018).

<sup>125</sup> Merkle, *Digital Marketing Report 3* (Q2 2018), <https://www.merkleinc.com/thought-leadership/digital-marketing-report/digital-marketing-report-q2-2018>.

<sup>126</sup> Merkle, *Digital Marketing Report 19* (Q2 2018), <https://www.merkleinc.com/thought-leadership/digital-marketing-report/digital-marketing-report-q2-2018>.

<sup>127</sup> Sara Lebow, *For the First Time, Instagram Contributes Over Half of Facebook's US Ad Revenues*, eMarketer (Nov. 2, 2021), <https://www.emarketer.com/content/instagram-contributes-over-half-of-facebook-us-ad-revenues>.

<sup>128</sup> Salvador Rodriguez, *Mark Zuckerberg Is Adamant that Instagram Should Not Be Broken Off from Facebook*, CNBC (Oct. 20, 2019), <https://www.cnn.com/2019/10/30/mark-zuckerberg-is-adamant-that-instagram-should-remain-with-facebook.html>.

1 of users reporting that they use it “almost constantly.”<sup>129</sup> Instagram’s young user base has become  
 2 even more important to Meta as the number of teens using Facebook has decreased over time.<sup>130</sup>

3 142. Facebook’s and Instagram’s success, and the riches they have generated for Meta,  
 4 have come at an unconscionable cost in human suffering. In September 2021, The Wall Street  
 5 Journal began publishing internal documents leaked by former Facebook product manager Frances  
 6 Haugen.<sup>131</sup>

7 143. The documents are disturbing. They reveal that, according to Meta’s researchers,  
 8 13.5% of U.K. girls reported more frequent suicidal thoughts and 17% of teen girls reported  
 9 worsening eating disorders after starting to use Instagram.<sup>132</sup> Over 40% of Instagram users who  
 10 reported feeling “unattractive” said that feeling began while using Instagram,<sup>133</sup> and 32% of teen  
 11 girls who already felt bad about their bodies felt even worse because of the app.<sup>134</sup>

12 144. Internal Meta presentations from 2019 and 2020 were unsparing in their conclusions  
 13 about the harms caused by Instagram: “We make body image issues worse for one in three teen  
 14  
 15

16 <sup>129</sup> Emily Vogels et al., *Teens, Social Media and Technology 2022*, Pew Research. Ctr. (Aug. 10,  
 17 2022), <https://www.pewresearch.org/internet/2022/08/10/teens-social-media-and-technology-2022/>;  
 18 *see also* Piper Sandler, *Taking Stock With Teens* 19 (Fall 2021),  
 19 [https://piper2.bluematrix.com/docs/pdf/3bad99c6-e44a-4424-8fb1-0e3adfcdbd1d4.pdf?utm\\_source=newsletter&utm\\_medium=email&utm\\_campaign=newsletter\\_axisam&stream=top](https://piper2.bluematrix.com/docs/pdf/3bad99c6-e44a-4424-8fb1-0e3adfcdbd1d4.pdf?utm_source=newsletter&utm_medium=email&utm_campaign=newsletter_axisam&stream=top) (eighty-one percent of teens use Instagram at least once a month).

20 <sup>130</sup> Sheera Frenkel et al., *Instagram Struggles with Fears of Losing Its ‘Pipeline’: Young Users*,  
 21 N.Y. Times (Oct. 26, 2021), *available at*  
 22 <https://www.nytimes.com/2021/10/16/technology/instagram-teens.html>.

23 <sup>131</sup> The collection of Wall Street Journal articles are available online via the following link:  
 24 <https://www.wsj.com/articles/the-facebook-files-11631713039?mod=bigtop-breadcrumb>.

25 <sup>132</sup> Morgan Keith, *Facebook’s Internal Research Found its Instagram Platform Contributes to Eating Disorders and Suicidal Thoughts in Teenage Girls, Whistleblower Says*, Insider (Oct. 3, 2021),  
 26 <https://www.businessinsider.com/facebook-knows-data-instagram-eating-disorders-suicidal-thoughts-whistleblower-2021-10>.

27 <sup>133</sup> Georgia Wells, Jeff Horwitz, Deepa Seetharaman, *Facebook Knows Instagram is Toxic for Teen Girls, Company Documents Show*, Wall St. J. (Sept. 14, 2021),  
 28 <https://www.wsj.com/articles/facebook-knows-instagram-is-toxic-for-teen-girls-company-documents-show-11631620739>; Facebook Staff, *Teen Girls Body Image and Social Comparison on Instagram – An Exploratory Study in the U.S.* 9 (Mar. 26, 2020),  
<https://s.wsj.net/public/resources/documents/teen-girls-body-image-and-social-comparison-on-instagram.pdf>.

<sup>134</sup> Billy Perrigo, *Instagram Makes Teen Girls Hate Themselves. Is That a Bug or a Feature?*, Time (Sept. 16, 2021), <https://time.com/6098771/instagram-body-image-teen-girls/>.

girls.” “Mental health outcomes related to this can be severe.” “Aspects of Instagram exacerbate each other to create a perfect storm.”<sup>135</sup>

145. Haugen’s revelations made clear to the public what Meta has long known: in an effort to addict kids and promote usage, Meta’s products exploit the neurobiology of developing brains, and all the insecurities, status anxieties, and beauty comparisons that come along with it. In a bid for higher profits, Meta ignored the harms resulting from its overuse-oriented business model, which are widespread, serious, long-term, and in tragic instances fatal.

**2. Meta intentionally encourages youth to use its products and then leverages that usage to increase revenue.**

146. Facebook and Instagram owe their success to their defective design, including their underlying computer code and algorithms. Meta’s tortious conduct begins before a user has viewed, let alone posted, a single scrap of content.

147. Meta describes the Instagram product as a “mobile-first experience.”<sup>136</sup> Indeed, the great majority of Instagram users in the U.S. access Instagram through a mobile application for either the iOS or Android operating system.

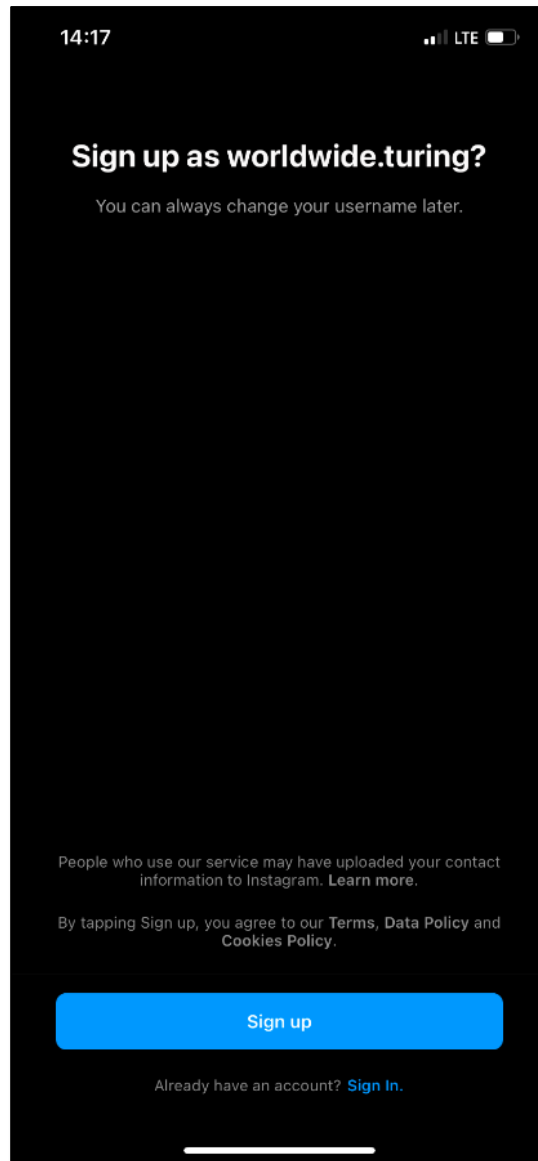
148. In order to use the Facebook or Instagram app, one must first obtain it. On a mobile device, this is accomplished by visiting a store from which the product can be downloaded—either the Apple App Store (for iPhone users) or the Google Play Store (for Android users). Once installed onto an individual’s smartphone, they can open the app. They are then asked to create a new account by entering an email address, adding a name, and creating a password and username.

149. A prospective Instagram or Facebook user is then invited to press a colorful button that says “Sign up.” In small print above this button, the user is informed: “By tapping Sign up, you agree to our Terms, Data Policy and Cookies Policy.” The text of those policies is not presented

<sup>135</sup> Georgia Wells, Jeff Horwitz, Deepa Seetharaman, *Facebook Knows Instagram is Toxic for Teen Girls, Company Documents Show*, Wall St. J. (Sept. 14, 2021), <https://www.wsj.com/articles/facebook-knows-instagram-is-toxic-for-teen-girls-company-documents-show-11631620739>; *Teen Girls Body Image and Social Comparison on Instagram – An Exploratory Study in the U.S.*, Wall St. J. (Sept. 29, 2021), <https://s.wsj.net/public/resources/documents/teen-girls-body-image-and-social-comparison-on-instagram.pdf>.

<sup>136</sup> Yorgos Askalidis, *Launching Instagram Messaging on Desktop*, Instagram (Sept. 25, 2020), <https://about.instagram.com/blog/engineering/launching-instagram-messaging-on-desktop>.

1 on the sign-up page. While the words “Terms,” “Data Policy,” and “Cookies Policy” are slightly  
 2 bolded, the user is not informed that they can or should click on them, or otherwise told how they  
 3 can access the policies.



150. Meta’s Data Policy (rebranded as a “Privacy Policy” in 2022), which applies to a  
 raft of Meta apps, including Facebook and Instagram,<sup>137</sup> indicates Meta collects a breathtaking  
 amount of data from the users of its products, including:

- a. “[c]ontent that you create, such as posts, comments or audio;”

<sup>137</sup> Meta, *Privacy Policy*, Meta (Jan. 1 2023),  
<https://mbasic.facebook.com/privacy/policy/printable/#annotation-1>.

- b. “[c]ontent you provide through our camera feature or your camera roll settings, or through our voice-enabled features;”
- c. “[I]nformation you've shared with us through device settings, such as GPS location, camera access, photos and related metadata;”
- d. “[m]essages that you send and receive, including their content;”
- e. “Metadata about content and messages;”
- f. “[t]ypes of content that you view or interact with, and how you interact with it;”
- g. “[t]he time, frequency and duration of your activities on our products;”
- h. “your contacts' information, such as their name and email address or phone number, if you choose to upload or import it from a device, such as by syncing an address book;”
- i. information about “What you're doing on your device (such as whether our app is in the foreground or if your mouse is moving);”
- j. “device signals from different operating systems,” including “things such as nearby Bluetooth or Wi-Fi connections;”
- k. “[i]nformation about the network that you connect your device to,” which includes “The name of your mobile operator or Internet service provider (ISP), Language, Time zone, Mobile phone number, IP address, Connection speed, Information about other devices that are nearby or on your network, Wi-Fi hotspots you connect to using our products;” and
- l. “information from . . . third parties, including . . . [m]arketing and advertising vendors and data providers, who have the rights to provide us with your information.”

151. While the Data Policy indicates the scope of user information collected by Meta through Facebook and Instagram, it is far less forthcoming about the purposes for which this data is collected, and its consequences for younger users.



152. The Data Policy presents those goals as benign and even positive for its users—“to provide a personalized experience to you” and to “make suggestions for you such as people you may know, groups or events that you may be interested in or topics that you may want to follow.”

153. The Data Policy does not inform users that the more time individuals spend using Facebook and Instagram, the more ads Meta can deliver and the more money it can make, or that the more time users spend on Facebook and Instagram, the more Meta learns about them, and the more it can sell to advertisers the ability to micro-target highly personalized ads.<sup>138</sup>

154. Meta monetizes its users and their data by selling ad placements to marketers. Meta generated \$69.7 billion from advertising in 2019, more than 98% of its total revenue for the year.<sup>139</sup>

155. Given its business model, Meta has every incentive to—and knowingly does—addict users to Facebook and Instagram. It accomplishes this through the algorithms that power its apps, which are designed to induce compulsive and continuous scrolling for hours on end, operating in conjunction with the other defective features described throughout this Complaint.<sup>140</sup>

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<sup>138</sup> Nor does it inform users that Meta has allowed third-party apps to harvest from Facebook “vast quantities of highly sensitive user and friends permissions.” *In re Facebook, Inc.*, No. 18-md-02843-VC, ECF No. 1104 at 9 (N.D. Cal. Feb. 9, 2023). This has included an app called Sync.Me, which—according to Meta’s internal investigative documents—“had access to many ‘heavyweight’ permissions,” “including the user’s entire newsfeed, friends’ likes, friends’ statuses, and friends’ hometowns.” *In re Facebook, Inc.*, No. 18-md-02843-VC, ECF No. 1104 at 9 (N.D. Cal. Feb. 9, 2023). It has included Microstrategy, Inc., which accessed data from “16 to 20 million” Facebook users, despite only being installed by 50,000 people. *In re Facebook, Inc.*, No. 18-md-02843-VC, ECF No. 1104 at 9 (N.D. Cal. Feb. 9, 2023). And it has included one Yahoo app that made “billions of requests” for Facebook user information, including “personal information about those users’ friends, including the friends’ education histories, work histories, religions, politics, ‘about me’ sections, relationship details, and check-in posts.” *In re Facebook, Inc.*, No. 18-md-02843-VC, ECF No. 1104 at 9-10 (N.D. Cal. Feb. 9, 2023).

<sup>139</sup> Rishi Iyengar, *Here’s How Big Facebook’s Ad Business Really Is*, CNN (July 1, 2020), <https://www.cnn.com/2020/06/30/tech/facebook-ad-business-boycott>.

<sup>140</sup> See Christian Montag, et al., *Addictive Features of Social Media/Messenger Platforms and Freemium Games against the Background of Psychological and Economic Theories*, 16 Int’l J. Env’t Rsch. and Pub. Health 2612, 5 (July 2019), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6679162/> (“One technique used to prolong usage time in this context is the endless scrolling/streaming feature.”); see generally, Ludmila Lupinacci, ‘Absentmindedly scrolling through nothing’: liveness and compulsory continuous connectedness in social media, 43 Media, Culture & Soc’y 273 (2021), <https://journals.sagepub.com/doi/epdf/10.1177/0163443720939454> (describing the ways that users use and experience social media apps).

1           156. Meta’s Data Policy contains no warnings whatsoever that use of its products at the  
2 intensity and frequency targeted by Meta creates known risks of mental, emotional, and behavioral  
3 problems for children, Instagram’s key audience.

4           157. Instagram’s collection and utilization of user data begins the instant a user presses  
5 “Sign Up.” At that point, Instagram prompts a new user to share a substantial amount of personal  
6 data. First, Instagram asks the user to share their personal contacts, either by syncing contacts from  
7 their phone and/or syncing their “Friends” from Facebook—“We’ll use your contacts to help you  
8 find your friends and help them find you.” Next, Instagram asks the new user to upload a photo of  
9 themselves. After that, Instagram asks the user to “Choose your interests” in order to “Get started  
10 on Instagram with account recommendations tailored to you.” And finally, Instagram invites the  
11 new user to “Follow accounts to see their photos and videos in your feed,” offering a variety of  
12 recommendations. After sign-up is completed, Instagram prompts the new user to post either a  
13 photo or a short video.

14           158. Meta’s collection and utilization of user data continues unabated as a new user  
15 begins to interact with its products. Meta’s tracking of behavioral data—ranging from what the user  
16 looks at, to how long they hover over certain images, to what advertisements they click on or  
17 ignore—helps Meta build out a comprehensive and unique fingerprint of the user’s identity. As the  
18 user continues to use the product, Meta’s algorithm works silently in the background to refine this  
19 fingerprint, by continuously monitoring and measuring patterns in the user’s behavior. Meta’s  
20 algorithm is sophisticated enough that it can leverage existing data to draw educated inferences  
21 about even the user behavior it does not track firsthand. Meta’s comprehensive data collection  
22 allows it to target and influence its users in order to increase their “engagement” with its apps.

23           159. Meta’s collection and analysis of user data allows it to assemble virtual dossiers on  
24 its users, covering hundreds if not thousands of user-specific data segments. This, in turn, allows  
25 advertisers to micro-target marketing and advertising dollars to very specific categories of users,  
26 who can be segregated into pools or lists using Meta’s data segments. Only a fraction of these data  
27 segments come from content knowingly designated by users for publication or explicitly provided  
28 by users in their account profiles. Many of these data segments are collected by Meta through covert

1 surveillance of each user's activity while using the product and when logged off the product,  
 2 including behavioral surveillance that users are unaware of, like navigation paths, watch time, and  
 3 hover time. Essentially, the larger Meta's user database grows, the more time the users spend on  
 4 the database, and the more detailed information that Meta can extract from its users, the more  
 5 money it makes.

6 160. Currently, advertisers can target Instagram and Facebook ads to young people based  
 7 on age, gender, and location.<sup>141</sup> According to U.S.-based non-profit Fairplay, Meta did not actually  
 8 cease collecting data from teens for advertising in July 2021, as Meta has claimed.<sup>142</sup>

9 161. Meta clearly understands the revenue and growth potential presented by its youngest  
 10 users, and it is desperate to retain them. Documents obtained by *The New York Times* indicate, that  
 11 since 2018, almost all of Instagram's \$390 million global marketing budget has gone towards  
 12 showing ads to teenagers.<sup>143</sup>

13 162. Before the rise of Instagram, Facebook was the social media product by which Meta  
 14 targeted young users. Until recently, when youth Facebook usage began to drop, this targeting was  
 15 devastatingly effective.

16 163. While the number of teen Facebook users has declined in recent years, Facebook  
 17 remains critical to Meta's strategy towards young users. Meta views Facebook as the nexus of teen  
 18 users' lives on social media, and as filling a similar role for such users as the career-focused social  
 19 media product LinkedIn fills for adults.

20 164. To create this cycle, and notwithstanding restrictions under COPPA, Meta has  
 21 targeted kids as young as six. The centerpiece of these efforts is Messenger Kids ("MK").<sup>144</sup>

22 <sup>141</sup> Andrea Vittorio, *Meta's Ad-Targeting to Teens Draws Advocacy Group Opposition*,  
 23 Bloomberg (Nov. 16, 2021), <https://news.bloomberglaw.com/privacy-and-data-security/metas-ad-targeting-to-teens-draws-advocacy-group-opposition>.

24 <sup>142</sup> Andrea Vittorio, *Meta's Ad-Targeting to Teens Draws Advocacy Group Opposition*,  
 25 Bloomberg (Nov. 16, 2021), <https://news.bloomberglaw.com/privacy-and-data-security/metas-ad-targeting-to-teens-draws-advocacy-group-opposition>.

26 <sup>143</sup> Sheera Frenkel, et al, *Instagram Struggles With Fears of Losing Its 'Pipeline': Young Users*  
 27 N.Y. Times (Oct. 16, 2021), <https://www.nytimes.com/2021/10/16/technology/instagram-teens.html>.

28 <sup>144</sup> Nick Stat, *Facebook launches a version of Messenger for young children*, The Verge  
 (December 4, 2022) <https://www.theverge.com/2017/12/4/16725494/facebook-messenger-kids-app-launch-ios-iphone-preview>.

1           165. Meta was also eager to market its products to tweens—users aged 10-12. Although  
 2 Meta employees publicly denied using children as “guinea pigs” to develop product features,  
 3 internally Meta was intensely interested in children’s use of their apps.<sup>145</sup>

4           166. Meta has studied features and designs from its other products to make Instagram as  
 5 attractive and addictive as possible to young users. Meta’s flagship product Facebook was the  
 6 original testing ground for many of Instagram’s addicting and otherwise defective features, which  
 7 the two products share to this day. This feature overlap is no accident: it represents a conscious  
 8 strategy adopted by Meta to keep social media users hooked on its “family” of products for their  
 9 entire lives.

10           167. From the beginning, both the Facebook and Instagram products have exploited  
 11 vulnerabilities in human psychology to addict users and maximize user time and engagement.  
 12 Facebook’s first President, Sean Parker, summed up the devastating impact of this product design  
 13 in a 2017 interview:

14                   God only knows what it's doing to our children's brains. . . . The  
 15 thought process that went into building these applications, Facebook  
 16 being the first of them, . . . was all about: ‘How do we consume as  
 17 much of your time and conscious attention as possible?’ . . . And that  
 18 means that we need to sort of give you a little dopamine hit every  
 19 once in a while, because someone liked or commented on a photo or  
 20 a post . . . . And that’s going to get you to contribute more content,  
 21 and that’s going to get you . . . more likes and comments. . . . It’s a  
 social-validation feedback loop . . . exactly the kind of thing that a  
 hacker like myself would come up with, because you’re exploiting a  
 vulnerability in human psychology. . . . The inventors, creators —  
 it’s me, it’s Mark [Zuckerberg], it’s Kevin Systrom on Instagram, it’s  
 all of these people — understood this consciously. And we did it  
 anyway.<sup>146</sup>

22           Tellingly, many tech leaders, including individuals with inside knowledge of the defects of  
 23 Meta’s social media products, either ban or severely limit their own children’s access to screen

25           <sup>145</sup> John Twomey, *Molly Russell Inquest Latest: Teenager Viewed Suicide Videos of ‘Most*  
 26 *Distressing Nature’*, Express (Sept. 23, 2022),  
 27 [https://www.express.co.uk/news/uk/1673461/Molly-Russell-inquest-latest-Teenager-suicide-](https://www.express.co.uk/news/uk/1673461/Molly-Russell-inquest-latest-Teenager-suicide-videos-instagram)  
[videos-instagram](https://www.express.co.uk/news/uk/1673461/Molly-Russell-inquest-latest-Teenager-suicide-videos-instagram).

28           <sup>146</sup> Mike Allen, *Sean Parker unloads on Facebook: “God only knows what it’s doing to our*  
*children’s brains,”* Axios (Nov. 9, 2017), [https://www.axios.com/2017/12/15/sean-parker-](https://www.axios.com/2017/12/15/sean-parker-unloads-on-facebook-god-only-knows-what-its-doing-to-our-childrens-brains-1513306792)  
[unloads-on-facebook-god-only-knows-what-its-doing-to-our-childrens-brains-1513306792](https://www.axios.com/2017/12/15/sean-parker-unloads-on-facebook-god-only-knows-what-its-doing-to-our-childrens-brains-1513306792).

time and social media.<sup>147</sup> Such leaders in the field include Tim Cook and former Facebook executives Tim Kendall and Chamath Palihapitiya.<sup>148</sup>

3. **Meta intentionally designed product features to addict children and adolescents.**

168. Meta designed Facebook and Instagram with harmful defects that users encounter at every stage of interaction with the product. These defects, which have harmed adolescents that use the products, include but are not limited to: (a) recommendation algorithms, fueled by extensive data collection, which are designed to promote use in quantities and frequency harmful to adolescents; (b) product features that prey upon children’s desire for validation and need for social comparison; (c) product features that are designed to create harmful loops of repetitive and excessive product usage; (d) lack of effective mechanisms, despite having the ability to implement them, to restrict children’s usage of the products; (d) inadequate parental controls, and facilitation of unsupervised use of the products; and (e) intentionally placed obstacles to discourage cessation of use of the products.

169. Facebook and Instagram have been designed, maintained, and constantly updated by one of the world’s most wealthy, powerful, and sophisticated corporations. Large teams of expert data scientists, user experience (“UX”) researchers, and similar professionals have spent years fine-tuning these products to addict users. Every aspect of the products’ interfaces, each layer of their subsurface algorithms and systems, and each line of underlying code has been crafted by brilliant minds. Every detail—the color of product icons, the placement of buttons within the

<sup>147</sup> Samuel Gibbs, *Apple’s Tim Cook: “I Don’t Want My Nephew on a Social Network”*, The Guardian (Jan. 19, 2018), <https://www.theguardian.com/technology/2018/jan/19/tim-cook-i-dont-want-my-nephew-on-a-social-network#:~:text=The%20head%20of%20Apple%2C%20Tim,it%20was%20announced%20on%20Friday>; James Vincent, *Former Facebook Exec Says Social Media is Ripping Apart Society*, The Verge (Dec. 11, 2017), <https://www.theverge.com/2017/12/11/16761016/former-facebook-exec-ripping-apart-society>.

<sup>148</sup> Samuel Gibbs, *Apple’s Tim Cook: “I Don’t Want My Nephew on a Social Network”*, The Guardian (Jan. 19, 2018), <https://www.theguardian.com/technology/2018/jan/19/tim-cook-i-dont-want-my-nephew-on-a-social-network#:~:text=The%20head%20of%20Apple%2C%20Tim,it%20was%20announced%20on%20Friday>; James Vincent, *Former Facebook Exec Says Social Media is Ripping Apart Society*, The Verge (Dec. 11, 2017), <https://www.theverge.com/2017/12/11/16761016/former-facebook-exec-ripping-apart-society>.

1 interface, the timing of notifications, etc.—is designed to increase the frequency and length of use  
 2 sessions. Therefore, it is impractical to create a comprehensive list of addictive, harm-causing  
 3 defects in the product until in-depth discovery occurs. Many product features, such as the inner  
 4 workings of Meta’s algorithms, are secret and unobservable to users. Discovery during this  
 5 litigation will reveal additional detail about the defective, addictive, and harmful design of Meta’s  
 6 products.

7                                    **a.        Facebook’s and Instagram’s algorithms maximize engagement,**  
 8                                    **promoting use at levels and frequency that is harmful to kids.**

9            170.    Meta has invested its vast resources to intentionally design Facebook and Instagram  
 10 to be addictive to adolescents, all the while concealing these facts from its users and the public.

11            171.    In its original form, Meta’s Facebook and Instagram algorithms ranked  
 12 chronologically, meaning that a particular user’s feed was organized according to when content  
 13 was posted or sent by the people the user followed. In 2009, Meta did away with Facebook’s  
 14 chronological feed in favor of engagement-based ranking; in 2016, it did the same on Instagram.  
 15 This “engagement-based” system meant that posts that received the most likes and comments were  
 16 highlighted first for users. But facing declining engagement, Meta redesigned its algorithms once  
 17 again in or around early 2018. This change prioritized “meaningful social interaction” (“MSI”),  
 18 with the goal of showing users content with which they were more likely to engage. The MSI-  
 19 oriented algorithms purportedly emphasize the interactions of users’ connections; e.g., likes and  
 20 comments, and give greater significance to the interactions of connections that appear to be closest  
 21 to users. Meta’s current algorithms consider a post’s likes, shares, and comments, as well as a  
 22 respective user’s past interactions with posts with similar characteristics, and displays the post in  
 23 the user’s feed if it meets these and certain other benchmarks.

24            172.    While Meta has publicly attempted to cast MSI as making time spent on its platforms  
 25 more “meaningful,” MSI was actually just another way for Meta to increase user engagement on  
 26 Instagram and Facebook. While the feature increases the likelihood that an interaction will be  
 27 “meaningful” by Meta’s definition—more likes, comments, and interactions—it does not consider  
 28 whether recommended content is “meaningful” to the user. This sets up users who may have reacted



1 negatively to upsetting or dangerous posts to see more of the same. That, in turn, can lead to a  
2 “horrible feedback loop/downward spiral”—with negative reactions leading the algorithm to  
3 present more posts that generate more negative reactions.

4 173. In algorithmically generating users’ feeds, Meta draws upon the vast amount of data  
5 it collects about and from its users. Meta’s algorithms combine the user’s profile (e.g., the  
6 information posted by the user on the product) and the user’s dossier (the data collected and  
7 synthesized by Meta, to which it assigns categorical designations) along with a dossier of similar  
8 users. Meta’s algorithms identify and rank recommended posts to optimize for various outcomes,  
9 such as for time-spent by a user or for user engagement. More often than not, this has the effect that  
10 Meta’s algorithms direct users to alarming and aversive material.

11 174. Much of what Meta shows users is content that they did not sign up for. Meta often  
12 overrides users’ explicit preferences because they conflict with Meta’s predictions of what will get  
13 shared and engaged.

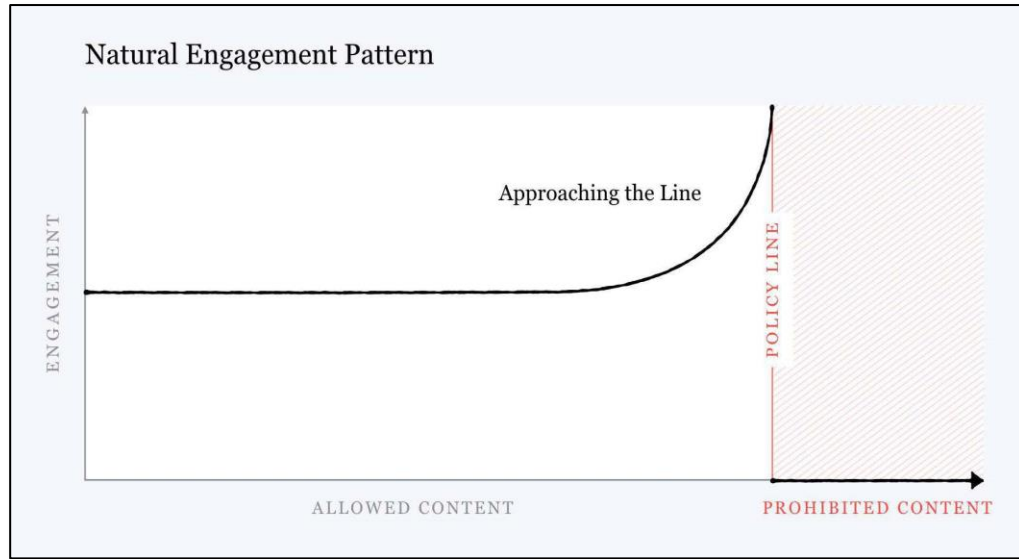
14 175. Through its algorithms, Meta intentionally supplants the content that users have  
15 elected to see with content that it believes will drive more use and engagement. Thus, the products  
16 that Meta touts as “[g]iv[ing] people the power to build community and bring[ing] the world closer  
17 together,” are actually designed in a way that prioritizes not social connection but product use at  
18 all costs, even to the detriment of the health and safety of young people.<sup>149</sup> The result, for Meta, is  
19 an increase in its bottom line. The result for young users is products that are so addictive that they  
20 return again and again, even when the products push posts they’re not interested in.

21 176. Meta knew that its engagement-based ranking algorithm (and its subsequent,  
22 iterative MSI ranking algorithm) was structured in a way that mean that content which produces  
23 intense reactions (i.e., strong engagement) triggers amplification by the apps. This propels users  
24 into the most reactive experiences, favoring posts that generate engagement because they are  
25 extreme in nature. Zuckerberg publicly recognized this in a 2018 post, in which he demonstrated  
26 the correlation between engagement and sensational content that is so extreme that it impinges upon  
27

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28 <sup>149</sup> Meta, *Mission Statement*, Meta, <https://about.meta.com/company-info/>.

Meta's own ethical limits, with the following chart:<sup>150</sup> While Zuckerberg went on to claim that Meta had designed its algorithms to avoid this natural propensity of engagement-based algorithms, his claim to the public is belied by extensive research indicating Meta's products do amplify extreme material.



177. Meta intentionally designed its MSI-focused algorithms to collect and analyze several kinds of data: a user's profile, content the user reports, content the user posts, content viewed, content engaged with, navigation paths, watch time, hover time (the amount of time a user viewed a piece of content), whether a user mutes or unmutes a video, and whether a user makes a full video screen, among other data. Meta uses this data from adolescents to predict what posts will capture the user's attention. Meta also tracks and utilizes data from various other sources, such as a user's off-product activities and the activities on websites that contain Facebook or Instagram like or share buttons.<sup>151</sup>

178. Meta's algorithmic ranking is utilized in a variety of product features that are designed by Meta to maximize user engagement.

<sup>150</sup> Mark Zuckerberg, *A Blueprint for Content Governance and Enforcement*, Facebook, <https://www.facebook.com/notes/751449002072082/>.

<sup>151</sup> Allen St. John, *How Facebook Tracks You, Even When You're Not on Facebook*, Consumer Reports (April 11, 2018), <https://www.consumerreports.org/privacy/how-facebook-tracks-you-even-when-youre-not-on-facebook-a7977954071/>.

179. For example, the Instagram product consists primarily of a never-ending and user-specific Feed, which Instagram’s data-driven algorithms generate for each user. In the app’s “Home” pane, this feed includes (but is not limited to) photos and videos posted by Instagram users that the user has elected to “follow,” as well as recommended photos and videos. In the app’s “Explore” pane, the feed consists almost exclusively of photos and videos from users the user has *not* elected to “follow.” In both cases, Instagram’s algorithms evaluate each user’s data to predict what material will maximize their attention and time spent using the product, irrespective of what the user wants to see.

180. Other “recommendation” features that are similarly algorithmically powered include Facebook’s Newsfeed, Instagram’s Feed, Instagram Reels, Facebook Reels, Facebook Watch (and its “For You” page), Accounts to Follow, People You May Know (introductions to persons with common connections or backgrounds), Groups You Should Join, and Discover (recommendations for Meta groups to join).

181. These product features work in combination to create and maintain a user’s “flow-state”: a hyper-focused, hypnotic state, where bodily movements are reflexive and the user is totally immersed in smoothly rotating through aspects of the social media product.<sup>152</sup>

182. They also create a phenomenon referred to as “feeding the spiral,” where someone feeling bad sees content that makes them feel bad and they engage with it. Then there Instagram is flooded with it, like an echo chamber screaming their most upsetting thoughts back at them. Meta recognizes that Instagram users at risk of suicide or self-injury are more likely to encounter more harmful self-injury and suicide-related content their feeds.

183. This phenomenon was cast into vivid relief when 14 year-old Molly Russell took her own life after viewing reams of content related to suicide, self-injury, and depression on Instagram and several other products.<sup>153</sup> During an official inquest investigating the role that social

<sup>152</sup> See e.g., *What Makes TikTok so Addictive?: An Analysis of the Mechanisms Underlying the World’s Latest Social Media Craze*, Brown Undergraduate J. of Pub. Health (2021), <https://sites.brown.edu/publichealthjournal/2021/12/13/tiktok/> (describing how IVR and infinite scrolling may induce a flow state in users).

<sup>153</sup> Dan Milmo, *Social Media Firms ‘Monetising Misery’, Says Molly Russell’s Father After Inquest*, The Guardian (Sept. 20, 2022), <https://www.theguardian.com/uk->

media products played in her death, a Meta executive said that such content was “safe” for children to see.<sup>154</sup> The coroner rejected this claim, finding instead that Molly “died from an act of self-harm whilst suffering from depression and the negative effects of on-line content” that she had not sought out, but that the products’ algorithms had pushed on her.<sup>155</sup> “The platform operated in such a way using algorithms as to result, in some circumstances, of binge periods of images, video clips and text some of which were selected and provided without Molly requesting them. These binge periods ... are likely to have had a negative effect on Molly.... In some cases, the content was particularly graphic, tending to portray self-harm and suicide as an inevitable consequence of a condition that could not be recovered from. The sites normalised her condition focusing on a limited and irrational view without any counterbalance of normality.”<sup>156</sup> The coroner further observed that “[t]here was no age verification when signing up to the on-line platform” and that Molly’s parents “did not have access, to the material being viewed or any control over that material.”<sup>157</sup>

184. Despite Molly’s death, and notwithstanding Meta’s research into dangerous spirals—at one point dubbed the “Rabbithole project”—the company did nothing to stop harm to its young users.

**b. Facebook’s and Instagram’s user interfaces are designed to create addictive engagement.**

185. To further drive user engagement (and thereby drive data collection and advertising revenue), Facebook and Instagram also utilize a series of design features that are carefully

[news/2022/sep/30/molly-russell-died-while-suffering-negative-effects-of-online-content-rules-coroner](https://www.mirror.co.uk/news/uk-news/molly-russell-inquest-instagram-boss-28085269).

<sup>154</sup> Ryan Merrifield, *Molly Russell Inquest: Instagram Boss Says Suicidal Posts Shouldn’t Be Banned From App*, The Mirror (Sept. 26, 2022), <https://www.mirror.co.uk/news/uk-news/molly-russell-inquest-instagram-boss-28085269>.

<sup>155</sup> Ryan Merrifield, *Molly Russell Inquest: Instagram Boss Says Suicidal Posts Shouldn’t Be Banned From App*, The Mirror (Sept. 26, 2022), <https://www.mirror.co.uk/news/uk-news/molly-russell-inquest-instagram-boss-28085269>.

<sup>156</sup> Andrew Walker, H.M. Coroner, *Regulation 28 Report to Prevent Future Deaths 2* (Oct. 13, 2022), [https://www.judiciary.uk/wp-content/uploads/2022/10/Molly-Russell-Prevention-of-future-deaths-report-2022-0315\\_Published.pdf](https://www.judiciary.uk/wp-content/uploads/2022/10/Molly-Russell-Prevention-of-future-deaths-report-2022-0315_Published.pdf).

<sup>157</sup> Andrew Walker, H.M. Coroner, *Regulation 28 Report to Prevent Future Deaths 2* (Oct. 13, 2022), [https://www.judiciary.uk/wp-content/uploads/2022/10/Molly-Russell-Prevention-of-future-deaths-report-2022-0315\\_Published.pdf](https://www.judiciary.uk/wp-content/uploads/2022/10/Molly-Russell-Prevention-of-future-deaths-report-2022-0315_Published.pdf).

1 calibrated to exploit users' neurobiology. These features work in tandem with algorithmic ranking  
2 to promote addictive engagement.

3 186. *First*, Meta programs IVR into its products. Behavioral training via intermittent  
4 rewards keeps users endlessly scrolling in search of a dopamine release, oftentimes despite their  
5 desire to put their phone down and move onto other activities. Children, who are less likely to have  
6 adequate impulse control than adults, are more susceptible to being drawn into this engineered  
7 "flow state" and more likely to grow dependent on Facebook or Instagram.

8 187. *Second*, Facebook and Instagram utilize "Likes" to control the release of dopamine  
9 in children. This feature, which Meta created for Facebook and "introduced ... to the world" in  
10 2010, allows users to indicate that they "Like" a post and visibly tallies the number of "Likes" any  
11 given post has earned.<sup>158</sup> Instagram launched in 2010 with the like feature built-in—a user can  
12 "Like" a post simply by tapping a heart-shaped button.

13 188. As with a slot machine, users never know when a like will come. This conditions  
14 them to stay on the app. But it also exacerbates issues of social comparison and feedback seeking,  
15 creating detrimental effects on adolescent physical and mental health.

16 189. Meta has expanded the likes feature in both Facebook and Instagram. In December  
17 2016, Meta began allowing users to like comments, not just posts. In February 2022, Meta began  
18 allowing users to "Like" Instagram Stories.<sup>159</sup> Expanding the like feature has intensified and  
19 multiplied the body of feedback that teen users receive (or don't receive) on their posts, preying on  
20 their desire to seek validation through comparison with others.

21 190. Despite its ability to alleviate the negative impact of likes on younger users, Meta  
22 chose only to implement half-measures. Meta created the option for users to hide like counts in  
23 May 2021, but it made this an optional setting left off by default.<sup>160</sup> Moreover, the number of likes  
24

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25 <sup>158</sup> Ray C. He, *Introducing new Like and Share Buttons*, Meta (Nov. 6, 2013),  
26 <https://developers.facebook.com/blog/post/2013/11/06/introducing-new-like-and-share-buttons/>.

27 <sup>159</sup> Jhinuk Sen, *Instagram is adding Likes to Stories so it doesn't clog up people's inboxes*,  
28 *Business Today* (Feb. 15, 2022), <https://www.businesstoday.in/technology/news/story/instagram-is-adding-likes-to-stories-so-it-doesnt-clog-up-peoples-inboxes-322661-2022-02-15>.

<sup>160</sup> Meta, *Giving People More Control on Instagram and Facebook* (May 26, 2021),  
<https://about.fb.com/news/2021/05/giving-people-more-control/>.

1 remain visible to the poster of the content. These changes stop short of resolving the issue of  
2 negative social comparison that these score-keeping features inflict.

3 191. *Third*, Meta has designed its video features in several ways geared to maximizing  
4 users' flow state and keeping them immersed in its products for longer periods of time. Video clips  
5 on Facebook Reels and Instagram Reels automatically play as a user scrolls and automatically  
6 restart once they conclude. Reels cannot be paused and tapping on the video will simply mute its  
7 audio. In addition, Meta imposes limits on the length of video content on Reels (currently 90  
8 seconds, and at times as short as 15 seconds). These limits ensure that users do not become bored  
9 by long videos and end their sessions.

10 192. Meta designed the comment features of Reels to minimize any disruption to users'  
11 heightened flow state. The interface of Reels displays the "Like," "Comment," "Save," and "Share"  
12 buttons on the bottom right of the screen. This placement avoids the milliseconds of delay or  
13 discomfort that could disrupt the flow state of right-handed users if placed elsewhere on the screen.  
14 Furthermore, these buttons are overlaid on top of the continuously playing clips, to eliminate any  
15 temporal or visual interruption during which a user might evaluate whether to continue using the  
16 product. Likewise, when a user taps to view the comments on a Reel, the video's audio and the top  
17 quarter of the video continue to play behind the comments section. Again, this design feature keeps  
18 the user's attention on the feed.

19 193. In keeping with its study of IVR, Meta knows when to strategically interrupt a user's  
20 flow. Occasionally, while a video is playing, a comment from the video will appear on the bottom  
21 of the screen, even without the user tapping to view the comments section. These comments are  
22 selected, displayed, and timed intentionally, to retain a user's attention by engaging with the  
23 comments section.

24 194. *Fourth*, Meta carefully (and defectively) calibrates the notifications it sends outside  
25 of the Facebook and Instagram apps, to maximize success in drawing back users who are not  
26 presently using the products. By default, Facebook and Instagram notify users through text and  
27 email about activity that might be of interest, which prompts users to open and reengage with the  
28 products. However, Meta intentionally chooses to display only a limited amount of information in



1 notifications, in order to trigger curiosity and manipulate the user to click or tap through to the  
2 product.<sup>161</sup>

3 195. Meta's studied manipulation of user engagement through notifications is  
4 particularly detrimental to teenagers, who lack impulse control and crave social rewards, and who  
5 are therefore more susceptible to falling into compulsive patterns of product use. Those harms are  
6 compounded by the fact that Meta sends push notifications in the middle of the night, prompting  
7 children to re-engage with Instagram and Facebook the apps when they should be sleeping.  
8 Disturbed and insufficient sleep is associated with poor health outcomes.<sup>162</sup>

9 196. *Fifth*, the "Stories" feature of both Facebook and Instagram is defectively designed  
10 to create artificial urgency so that users return to the apps. "Stories" was added by Meta in response  
11 to the growing popularity of Snapchat with teenagers in 2016. "Stories" appear at the top of a user's  
12 home page upon opening the app and are available to view for only 24 hours, after which they  
13 disappear. This creates pressure to use the product daily, or else risk missing out on dopamine-  
14 causing stimuli or social interactions. This feature is particularly addicting to adolescent users, who  
15 feel increased social pressure to view all their contact's stories each day before the content  
16 disappears, thus increasing their compulsive usage and potential addiction to the product.<sup>163</sup> The  
17 ephemeral nature of disappearing content is a ploy intended to inspire urgent perusal, and it  
18 works.<sup>164</sup>

19 197. *Sixth*, Instagram's and Facebook's algorithms are structured to recommend  
20 "keywords" or "hashtags" to its young users that lead them to navigate to dangerous content.

22 <sup>161</sup> *Clickbait*, Merriam-Webster Dictionary, <https://www.merriam-webster.com/dictionary/clickbait>.

23 <sup>162</sup> Nat'l Inst. of Mental Health, *The Teen Brain: Still Under Construction* 6 (2011),  
24 [http://www.ncdsv.org/images/NIMH\\_TeenBrainStillUnderConstruction\\_2011.pdf](http://www.ncdsv.org/images/NIMH_TeenBrainStillUnderConstruction_2011.pdf).

25 <sup>163</sup> Sarah Lempa, *Why Are Instagram Stories So Addicting?*, Healthline (April 5, 2021),  
26 <https://www.healthline.com/health/why-are-instagram-stories-so-addicting#The-story-behind-the-Stories>.

27 <sup>164</sup> Madiha Jamal, *Ephemeral Content — The Future of Social Media Marketing*, Better  
28 Marketing (March 2, 2021), <https://bettermarketing.pub/ephemeral-content-the-future-of-social-media-marketing-996d265916c2#:~:text=Ephemeral%20content%20relates%20to%20the,WhatsApp%20Stories%2C%20and%20LinkedIn%20Stories>.

198. All of the above defects, in addition to the Instagram-specific defects discussed in the section that follows, interact with and compound one another to make Meta's products addictive and harmful for kids.

199. Meta has long been aware of this dangerous and toxic brew, yet has Meta failed to invest in adequate tools to limit the harm their products inflicted on users.

200. Meta's failure to prevent compulsive use by children, and the harms resulting therefrom, are a simple function of its misplaced priorities: Profit over safety.

201. Meta's decision to hook teenage users by rewiring their brains has not aged well for some of its former employees. Chamath Palihapitiya, the former Vice President of User Growth at Facebook, admitted that he feels "tremendous guilt" about his contributions to social media, saying "[t]he short-term, dopamine-driven feedback loops that we have created are destroying how society works."<sup>165</sup>

**c. Instagram's defective product features cause negative appearance comparison and social comparison**

202. Instagram use by teens is associated with negative impacts on body image, social comparison, eating issues, confidence in friendships, and mental health, including anxiety, depression, and suicidal thoughts. Teen users feel worse about themselves while using Instagram. Some even link their negative feelings to the platform.

203. Social comparison is particularly bad on Instagram because, among other things, celebrity and influencer content is pervasive. By manufacturing and emphasizing influence and celebrity, and purposely inundating tween and teen users with those accounts, Meta further exploits and monetizes social comparison. That has come at a direct cost to the mental health of its teens users, who are more susceptible to body dissatisfaction and negative social comparisons.

204. Score-keeping features designed into Instagram amplify these problems. Teenage girls are particularly impacted when comparing like counts, follower counts, views, and comments on their posts to those of models, celebrities, and so-called influencers.

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<sup>165</sup> Amy B. Wang, *Former Facebook VP says social media is destroying society with 'dopamine-driven feedback loops'*, Wash. Post (Dec. 12, 2017), <https://www.washingtonpost.com/news/the-switch/wp/2017/12/12/former-facebook-vp-says-social-media-is-destroying-society-with-dopamine-driven-feedback-loops/>.

205. Instagram compounds the foregoing problems with yet another pernicious feature—image “filters” that allow users to engage in selective self-presentation by altering their appearance in photos and videos. These filters allow facial structure alteration, body slimming, skin lightening, skin tanning, blemish clearing, the artificial overlap and augmentation of makeup, and other beautification “improvements.”<sup>166</sup>

206. These filters have harm young users in multiple ways, both independently and in concert with Instagram’s other defective features.<sup>167</sup>

207. *First*, the easy accessibility of filters, combined with features such as “Likes,” encourage adolescents to artificially change their appearances.<sup>168</sup> As noted, adolescents naturally seek social validation. When they notice increased interaction and favorable responses to their filter-edited photos (more “Likes” and comments”), many are led to believe they are only attractive when their images are edited.<sup>169</sup> These young people begin to prefer how they look using filters, not as they appear naturally.<sup>170</sup> In a 2016 study, 52% of girls said they use image filters every day, and 80% have used an app to change their appearance before age 13.<sup>171</sup>

208. *Second*, because Instagram already promotes a high degree of social comparison, youth find themselves comparing their real-life appearances to the edited appearances not only of

<sup>166</sup> T. Mustafa, *An ‘Instagram Vs Reality’ filter is showing how toxic photo editing can be*, Metro (April 2021); <https://metro.co.uk/2021/04/30/an-instagram-vs-reality-tool-is-showing-how-toxic-filters-can-be-14498265/>.

<sup>167</sup> Anna Haines, *From ‘Instagram Face’ To ‘Snapchat Dysmorphia’: How Beauty Filters Are Changing The Way We See Ourselves*, Forbes (Apr. 27, 2021), <https://www.forbes.com/sites/annahaines/2021/04/27/from-instagram-face-to-snapchat-dysmorphia-how-beauty-filters-are-changing-the-way-we-see-ourselves/?sh=3c32eb144eff>.

<sup>168</sup> Tate Ryan-Mosley, *Beauty Filters Are Changing the Way Young Girls See Themselves*, MIT Tech. Rev. (Apr. 2, 2021), <https://www.technologyreview.com/2021/04/02/1021635/beauty-filters-young-girls-augmented-reality-social-media/amp/>.

<sup>169</sup> Tate Ryan-Mosley, *Beauty Filters Are Changing the Way Young Girls See Themselves*, MIT Tech. Rev. (Apr. 2, 2021), <https://www.technologyreview.com/2021/04/02/1021635/beauty-filters-young-girls-augmented-reality-social-media/amp/>.

<sup>170</sup> Poojah Shah, *How Social Media Filters Are Affecting Youth*, Parents (Apr. 28, 2022), <https://www.parents.com/kids/health/childrens-mental-health/how-social-media-filters-are-affecting-youth/>.

<sup>171</sup> Anna Haines, *From ‘Instagram Face’ to ‘Snapchat Dysmorphia’: How Beauty Filters Are Changing the Way We See Ourselves*, Forbes (Apr. 27, 2021), <https://www.forbes.com/sites/annahaines/2021/04/27/from-instagram-face-to-snapchat-dysmorphia-how-beauty-filters-are-changing-the-way-we-see-ourselves/?sh=3c2d58704eff>.

1 themselves but of others online.<sup>172</sup> These false and unrealistic body image standards further lead  
 2 teenagers to develop negative perceptions of their appearance. 77% of girls reported trying to  
 3 change or hide at least one part of their body before posting a photo of themselves, and 50% believe  
 4 they did not look good without editing.<sup>173</sup>

5 209. *Third*, the specific changes filters make to an individual's appearance can cause  
 6 negative obsession or self-hatred surrounding aspects of their appearance.<sup>174</sup> The filters alter  
 7 specific facial features such as eyes, lips, jaw, face shape, and slimness, which often require medical  
 8 intervention to alter in real life.<sup>175</sup> The pervasiveness of Meta-designed filters through the algorithm  
 9 permeates Instagram and causes adolescent users to negatively compare their real appearances  
 10 against a false physical reality.<sup>176</sup> In one recent study, even users who reported a higher initial self-  
 11 esteem level felt they looked 44% worse before their image was edited using a filter.<sup>177</sup> "[W]hen  
 12 the . . . filter increased the gap between how participants wanted to look and how they felt they  
 13 actually looked, it reduced their self-compassion and tolerance for their own physical flaws."<sup>178</sup> As

14  
15  
16  
17 <sup>172</sup> See *Teen Girls Body Image and Social Comparison on Instagram – An Exploratory Study in*  
 18 *the U.S.*, Wall. St. J. (Sept. 29, 2021), [https://s.wsj.net/public/resources/documents/teen-girls-](https://s.wsj.net/public/resources/documents/teen-girls-body-image-and-social-comparison-on-instagram.pdf)  
 19 [body-image-and-social-comparison-on-instagram.pdf](https://s.wsj.net/public/resources/documents/teen-girls-body-image-and-social-comparison-on-instagram.pdf) (explaining that users forget that Instagram  
 20 only shows the highlights of people's lives and is not depicting reality).

21 <sup>173</sup> Anna Haines, *From 'Instagram Face' to 'Snapchat Dysmorphia': How Beauty Filters Are*  
 22 *Changing the Way We See Ourselves*, Forbes (Apr. 27, 2021),  
 23 [https://www.forbes.com/sites/annahaines/2021/04/27/from-instagram-face-to-snapchat-](https://www.forbes.com/sites/annahaines/2021/04/27/from-instagram-face-to-snapchat-dysmorphia-how-beauty-filters-are-changing-the-way-we-see-ourselves/?sh=3c2d58704eff)  
 24 [dysmorphia-how-beauty-filters-are-changing-the-way-we-see-ourselves/?sh=3c2d58704eff](https://www.forbes.com/sites/annahaines/2021/04/27/from-instagram-face-to-snapchat-dysmorphia-how-beauty-filters-are-changing-the-way-we-see-ourselves/?sh=3c2d58704eff).

25 <sup>174</sup> Tonya Russell, *Social Media Filters Are Changing How Young People See Themselves*, Teen  
 26 Vogue (Jan. 25, 2022), [https://www.teenvogue.com/story/social-media-filters-how-young-people-](https://www.teenvogue.com/story/social-media-filters-how-young-people-see-themselves/amp)  
 27 [see-themselves/amp](https://www.teenvogue.com/story/social-media-filters-how-young-people-see-themselves/amp).

28 <sup>175</sup> Tonya Russell, *Social Media Filters Are Changing How Young People See Themselves*, Teen  
 Vogue (Jan. 25, 2022), [https://www.teenvogue.com/story/social-media-filters-how-young-people-](https://www.teenvogue.com/story/social-media-filters-how-young-people-see-themselves/amp)  
[see-themselves/amp](https://www.teenvogue.com/story/social-media-filters-how-young-people-see-themselves/amp).

<sup>176</sup> Tonya Russell, *Social Media Filters Are Changing How Young People See Themselves*, Teen  
 Vogue (Jan. 25, 2022), [https://www.teenvogue.com/story/social-media-filters-how-young-people-](https://www.teenvogue.com/story/social-media-filters-how-young-people-see-themselves/amp)  
[see-themselves/amp](https://www.teenvogue.com/story/social-media-filters-how-young-people-see-themselves/amp).

<sup>177</sup> Ana Javornik, Ben Marder, Marta Pizzetti, & Luk Warlop, *Research: How AR Filters Impact*  
*People's Self-Image*, Harvard Business Review (December 22, 2021),  
<https://hbr.org/2021/12/research-how-ar-filters-impact-peoples-self-image>.

<sup>178</sup> Ana Javornik, Ben Marder, Marta Pizzetti, & Luk Warlop, *Research: How AR Filters Impact*  
*People's Self-Image*, Harvard Business Review (December 22, 2021),  
<https://hbr.org/2021/12/research-how-ar-filters-impact-peoples-self-image>.

one psychodermatologist has summed it up, “these apps subconsciously implant the notion of imperfection and ugliness, generating a loss of confidence.”<sup>179</sup>

210. *Fourth*, Meta has intentionally designed its product to not alert adolescent users when images have been altered through filters or edited. Meta has therefore designed its product so that users cannot know which images are real and which are fake, deepening negative appearance comparison.

211. The impact of the negative social and appearance comparison caused by Meta’s defective product features is profound. Instagram-induced social comparison creates a schism between the ideal self and the real self, leading to distress and depression. Filters, especially in combination with other product features, cause body image issues, eating disorders, body dysmorphia, and related harms.<sup>180</sup>

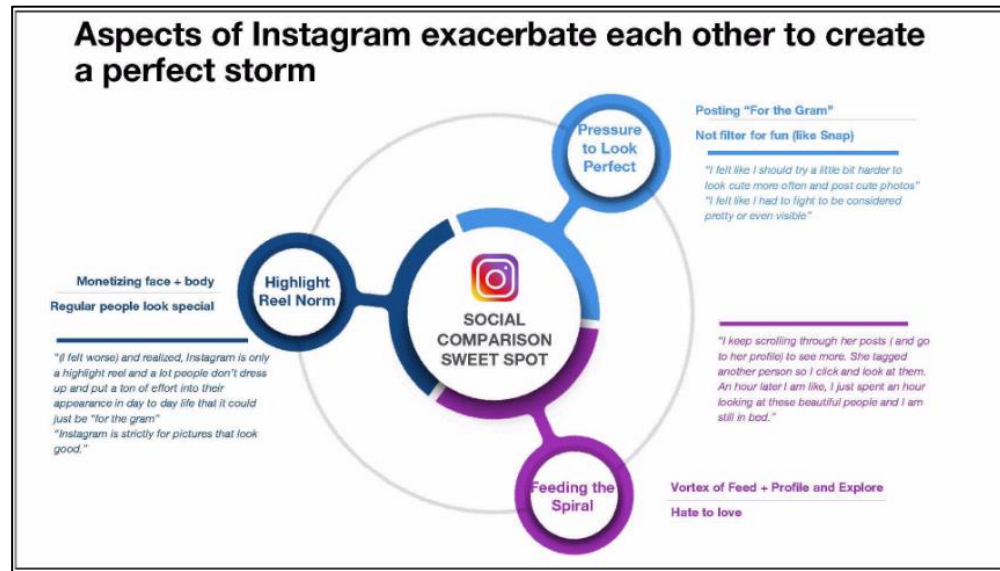
212. The various product defects built into Instagram exacerbate each other, creating a perfect storm. Posting for the ‘gram creates a pressure to look perfect.<sup>181</sup> The ability of influencers to monetize their face body creates a highlight reel norm. And “feeding the spiral” creates compulsive use.<sup>182</sup> Taken together, these three features—all driven by very specific design features of Instagram—create a social comparison sweet spot:

<sup>179</sup> Genesis Rivas, *The Mental Health Impacts of Beauty Filters on Social Media Shouldn’t Be Ignored – Here’s Why*, InStyle (Sept. 14, 2022), <https://www.instyle.com/beauty/social-media-filters-mental-health>.

<sup>180</sup> See Sian McLean, Susan Paxton, Eleanor Wertheim, & Jennifer Masters, *Photoshopping the Selfie: Self Photo Editing and Photo Investment Are Associated with Body Dissatisfaction in Adolescent Girls*, 48 Int’l J. of Eating Disorders 1132, 1133 (Aug. 27, 2015), <https://pubmed.ncbi.nlm.nih.gov/26311205/> (presenting a 2015 study involving 101 adolescent girls, which found that more time spent editing and sharing selfies on social media raised their risk of experiencing body dissatisfaction and disordered eating habits.); Scott Griffiths, Stuart Murray, Isabel Krug, & Sian McLean, *The Contribution of Social Media to Body Dissatisfaction, Eating Disorder Symptoms, and Anabolic Steroid Use Among Sexual Minority Men*, 21 Cyberpsychology Behavior, and Soc. Networking 149, 149 (Mar. 1, 2018), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5865626/>.

<sup>181</sup> *Teen Girls Body Image and Social Comparison on Instagram – An Exploratory Study in the U.S.*, Wall. St. J. (Sept. 29, 2021), <https://s.wsj.net/public/resources/documents/teen-girls-body-image-and-social-comparison-on-instagram.pdf>.

<sup>182</sup> *Id.*



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213. Meta understands that the social comparison it knowingly enables through appearance filters create compulsive behavior among child users, especially when paired with other defects such as likes and algorithmic recommendations.

214. Despite its awareness that the deliberate design of Instagram was drastically damaging teen mental and physical health, Meta ignored the problem, failing to implement its own researchers' recommendations.

**d. Meta has failed to implement effective age-verification measures to keep children off of Facebook and Instagram.**

215. Meta purports to ban children under the age of 13 from using its products but, at all relevant times, has lacked any reliable form of age verification to prevent such use.

216. Other online products employ substantially more effective and reliable age verification schemes before granting children access. These include but are not limited to connecting new users to parents' accounts, credit card verification, verification by presentation of identification card (or other government-issued document), or linking a verified undergraduate or professional email, among other methods. Meta chooses not to implement any of these systems, even though they are technologically feasible, used by many companies across the Internet, and could be employed at relatively low cost. Indeed, Meta itself uses an age verification technique for

<sup>183</sup> *Id.*



its Facebook Dating product that it claims can verify ages without identifying users—but does not use the same technology at account startup for Facebook or Instagram.<sup>184</sup>

217. For most of its history, Meta knew that children under the age of 13 were using its apps. And it certainly could have figured this out based on posted photos of elementary school age users. Yet Meta continued to promote and target Facebook and Instagram to children. As long as a new user simply clicked a box confirming that they were at least 13 years old, Meta asked no questions, engaged in zero follow-up, and let the user access the products indefinitely.

218. This minimal age verification procedure is toothless. Meta does not as a default matter require users to verify their ages upon signing up to use Instagram or Facebook. Users are only asked to self-report their birthday:

(Facebook, January 2023)

(Instagram, January 2023)

219. If the user reports a birthday indicating they are less than 13 years old, they are informed that they cannot create an account. However, after acknowledging this message, users can *immediately* reattempt to create an account and input an eligible birthday. When a user enters an eligible birthday, there are no restrictions to creating an account, other than having it linked to a

<sup>184</sup> Erica Finkle, Meta Director of Data Governance, *Bringing Age Verification to Facebook Dating*, Meta (Dec. 5, 2022), <https://about.fb.com/news/2022/12/facebook-dating-age-verification/>.

1 cell phone number or an email address. In other words, Meta routinely allows pre-teens to  
2 misrepresent their age as 13 or 40 or any other age—without so much as asking for proof. This is  
3 analogous to selling a teenager alcohol who has admitted to being under 21 but then promptly  
4 changed his story.

5 220. The upshot is that, in a matter of seconds, and without age verification, identity  
6 verification, or parental consent, children of all ages can create a Facebook or Instagram account,  
7 and immediately become subject to the products’ various addictive and harmful features.<sup>185</sup>

8 221. There can be no serious debate about whether Meta has more effective age  
9 verification tools at its disposal. Perversely, Meta does employ age verification on Instagram—but  
10 only when a user self-reports they are *younger* than 13. In that case, Meta provides a user with what  
11 amounts to an appeal right: “if you believe we made a mistake, please verify your age by submitting  
12 a valid photo ID that clearly shows your face and date of birth.”

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28 <sup>185</sup> Similarly, the absence of effective age verification measures means that adult users can claim  
to be children—with obvious dangers to the actual children on Meta’s products.

4:07 5G

### Help Us Verify Your Age

You must be at least 13 years old to have an Instagram account. We disabled your account because you are not old enough yet. If you believe we made a mistake, please verify your age by submitting a valid photo ID that clearly shows your face and date of birth.

Full name

Email address  
 Please provide the email address connected to your account.

Instagram username

Date of birth

Your ID  
 no file selected

Please provide a photo of a [valid ID](#).

Your photo ID must include your face and date of birth so we can verify your age. After you send us a copy of your ID, it'll be encrypted and stored securely. Your ID won't be visible on your profile, to friends or to other people on Instagram and will be deleted 30 days after submission.

Any additional info

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help.instagram.com

222. That is, instead of asking users to prove they are really *over* 13, Meta asks them if they are really sure they are *under* 13. At best, this reflects a completely upside-down view of Meta's duty of care, using age verification to screen *in* minor users but not to screen them *out*. At worst, Meta's "are you sure you're really under 13" question invites pre-teens to falsify their identification to gain access to Instagram.

223. Similarly, Meta imposes unnecessary barriers to the removal of accounts created by children under 13. Since at least April 2018, Instagram and Facebook both accept reports of accounts created by children under 13.<sup>186</sup> However, before an Instagram or Facebook account is

<sup>186</sup> *Report an Underage User on Instagram*, Instagram, <https://help.instagram.com/contact/723586364339719?fbclid=IwAR3E5rZo8zvp9Uw3giRoQRM>

deleted, Meta requires verification that the child is under the age of 13. For example, Instagram's reporting page states:

if you're reporting a child's account that was made with a false date of birth, and the child's age can be reasonably verified as under 13, we'll delete the account. You will not get confirmation that the account has been deleted, but you should no longer be able to view it on Instagram. Keep in mind that complete and detailed reports (example: providing the username of the account you're reporting) help us take appropriate action. If the reported child's age can't reasonably be verified as under 13, then we may not be able to take action on the account.<sup>187</sup>

Facebook's reporting page contains almost identical language.<sup>188</sup> By choosing to implement age verification only before deleting accounts of users suspected to be children, but not when those accounts are first created, Meta makes it more difficult to prove a user is under age 13 than it does for a minor to pretend to be over 13.

224. It is unclear how long Meta takes to delete a reported account on average, if it does so at all. Meta has ignored some parents' attempts to report and deactivate accounts of children under 13 years old.

225. Zuckerberg has stated that he believes children under 13 should be allowed on Facebook,<sup>189</sup> so Meta's lax approach to age verification is no surprise.

226. Meta's approach to underage users of its product has consistently been one of feigned ignorance. On October 10, 2021, Senator Marsha Blackburn reported that a young celebrity told Instagram CEO Adam Mosseri that she had been active on Instagram since she was eight. Mosseri replied that he "didn't want to know that."<sup>190</sup>

<sup>187</sup> [y5qFmIGpy-NOLLtpctH0wkalXtfJlft9O09Q](https://www.facebook.com/help/contact/209046679279097); *Report an Underage Child*, Facebook, <https://www.facebook.com/help/contact/209046679279097>.

<sup>188</sup> *Report an Underage User on Instagram*, Instagram, <https://help.instagram.com/contact/723586364339719?fbclid=IwAR3E5rZo8zvp9Uw3giRoQRM y5qFmIGpy-NOLLtpctH0wkalXtfJlft9O09Q>.

<sup>189</sup> *Reporting an Underage Child*, Facebook, <https://www.facebook.com/help/contact/209046679279097>.

<sup>190</sup> Kashmir Hill, *Mark Zuckerberg Is Wrong About Kids Under 13 Not Being Allowed on Facebook* (May 20, 2011), <https://www.forbes.com/sites/kashmirhill/2011/05/20/mark-zuckerberg-is-wrong-about-kids-under-13-not-being-allowed-on-facebook/?sh=2ea85e825506>.

<sup>190</sup> *Protecting Kids Online: Testimony from a Facebook Whistleblower Hearing before Subcomm. On Consumer Protection, Product Safety, and Data Security* (Oct. 5, 2021), available at <https://www.commerce.senate.gov/2021/10/protecting%20kids%20online:%20testimony%20from%20a%20facebook%20whistleblower>.

227. But Meta *does* know that its age-verification protocols are inadequate to keep minors off Facebook and Instagram. According to a May 2011 ABC News report, “about 7.5 million [Facebook] users in the U.S. are under the age of 13, and about 5 million are under the age of 10.”<sup>191</sup> Meta knows through retrospective cohort analyses that “up to 10 to 15% of even 10-year-olds in a given cohort may be on Facebook or Instagram.”<sup>192</sup>

**e. Facebook’s and Instagram’s parental controls are defective.**

228. Facebook and Instagram lack adequate parental controls, which hinders parents’ ability to monitor and protect their children from harm.

229. Despite its obligations under COPPA, Meta does not require “verifiable parental consent” for minors to use Facebook or Instagram. Meta has chosen to avoid its obligations by *purporting* to ban children younger than 13, despite knowing that such children continue to access and use its products due to its inadequate age verification methods.

230. While COPPA requires parental consent only for users under the age of 13, a reasonable company that knows or should have known its products are harmful to adolescents would require parental consent for *any* minor to use them. But Meta’s lack of parental consent requirement for any underage users robs parents of an important way to protect their children from the harms caused by Instagram and Facebook.

231. Those apps largely lack parental controls, despite their ready availability, affordability, and ease of implementation. For example, Meta has chosen not to: (a) require children’s accounts on Facebook and Instagram to be linked to their parents’, as it does with another one of its products, Messenger Kids;<sup>193</sup> (b) send reports of a child’s activity to parents; (c) allow parents to implement maximum daily usage limitations or to prohibit use during certain hours

<sup>191</sup> Ki Mae Heussner, *Underage Facebook Members: 7.5 Million Users Under Age 13*, ABC (May 9, 2011), <https://abcnews.go.com/Technology/underage-facebook-members-75-million-users-age-13/story?id=13565619>.

<sup>192</sup> *Protecting Kids Online: Testimony from a Facebook Whistleblower Hearing before Subcomm. On Consumer Protection, Product Safety, and Data Security* (Oct. 5, 2021), available at <https://www.commerce.senate.gov/2021/10/protecting%20kids%20online:%20testimony%20from%20a%20facebook%20whistleblower>.

<sup>193</sup> Loren Chang, *Introducing Messenger Kids, a New App for Families to Connect*, Meta (Dec. 4, 2017), <https://about.fb.com/news/2017/12/introducing-messenger-kids-a-new-app-for-families-to-connect/>.

(school, sleep hours, etc.); (d) notify parents about interactions with accounts associated with adults; (e) notify parents when CSAM is found on a minor's account; or (f) require parental approval before a minor can follow new accounts.

232. Controls like these would enable parents to track the frequency, time of day, and duration of their child's use, identify and address problems arising from such use, and better exercise their rights and responsibilities as parents. It is reasonable for parents to expect that social media companies that actively promote their products to minors will undertake reasonable efforts to notify parents when their child's use becomes excessive, occurs during sleep time, or exposes the child to harmful content. Meta could feasibly design Instagram and Facebook to do so at negligible cost.

233. Meta creates a foreseeable risk to young users through its defective products and then attempts to shift the burden of protection from those products onto parents. As troublingly, Meta intentionally designs Facebook and Instagram so that children can easily evade their parents' supervision. Instagram and Facebook allow children to create a limitless number of anonymous accounts without parental approval or knowledge, and also allows kids to block their parent's profile.<sup>194</sup> On Instagram, children can post stories to "Close Friends Only" (i.e., to a select group of followers), excluding their parents. On Facebook, children can place their parents on a "restricted list" of people who are unable to view their stories.

234. Finally, Meta has failed to develop effective reporting tools to deal with abuse directed at children through Instagram and Facebook. Meta does not have a phone number that a parent or child can call to report such abuse in real time. Its online reporting mechanisms lack an immediate response mechanism, regardless of the seriousness of the harm at issue. Some users have found that Meta declined to respond to reports filed through its online reporting tool, citing technical issues.

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<sup>194</sup> See Caity Weaver and Danya Issawi, *'Finsta,' Explained*, N.Y. Times (Sept. 30, 2021), <https://www.nytimes.com/2021/09/30/style/finsta-instagram-accounts-senate.html> ("It is neither an official designation nor a type of account offered by Facebook. Rather, it is a term many users ascribe to secondary accounts they create for themselves on Instagram, where their identities — and, often, the content of their posts — are obscured to all but a small, carefully chosen group of followers.").

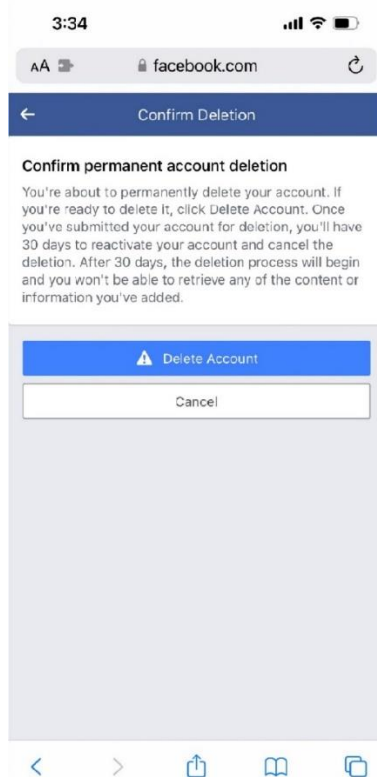


f. **Facebook's and Instagram's defective features include impediments to discontinuing use.**

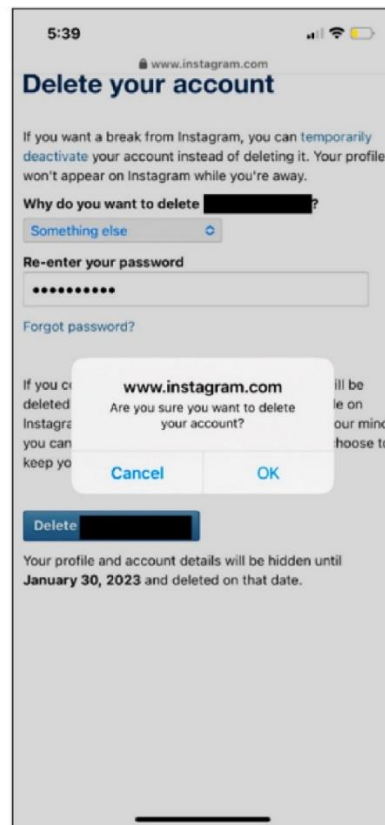
235. Meta has intentionally and defectively designed its products so that adolescent users face significant navigational obstacles and hurdles when trying to delete or deactivate their accounts, in contrast to the ease with which users can create those accounts.

236. Currently, to delete or deactivate an Instagram or Facebook account, a user must locate and tap on approximately seven different buttons (through seven different pages and popups) from the main feed. Some young users give up on their attempts to quit because it's too difficult to navigate through the interface to completion.

237. Even if a user successfully navigates these seven pages, Meta still won't immediately delete their account. Instead, Meta preserves the account for 30 more days. If at any time during those 30 days a user's addictive craving becomes overwhelming and they access the account again, the deletion process starts over. The user must go through all the above steps again, including the 30-day waiting period, if they again wish to delete their account.



(Facebook Final Deletion Screen  
February 2023)



(Instagram Final Deletion Screen,  
January 2023)(account name  
redacted)

238. As an additional barrier to deletion, Meta urges users of both products to deactivate, rather than delete, their accounts. For example, Instagram users who choose to delete their accounts are immediately shown a screen with their profile picture and asked: “Deactivate your account instead of deleting?” The option to deactivate is conspicuously highlighted. Similarly, Facebook displays a screen that automatically selects the option of deactivating rather than deleting a user account.

239. Meta’s aggressive efforts to prevent users from discontinuing their use of Facebook and Instagram is particularly problematic because unsuccessful efforts to discontinue use are a hallmark of addiction, incorporated as the sixth criteria in the *Bergen Social Media Addiction Scale*, discussed above.

**4. Meta has concealed from users, the public, and Congress the harmful effects that Instagram’s and Facebook’s design have on children.**

240. Meta has engaged in a years-long pattern of concealing critical information about the safety of Instagram and Facebook from the public. While Meta touted the safety of its products, it failed to disclose information it knew concerning the significant risks associated with its products, even though it knew that the public lacked access to this information.

241. Meta’s pattern of intentional concealment came to a head in August 2021, just weeks before Frances Haugen dropped her bombshell revelations on the public. On August 4, 2021, Senators Marsha Blackburn and Richard Blumenthal wrote to Mark Zuckerberg. The Senators’ letter observed that “[a]n expanding volume of scientific research shows that social media platforms can have a profoundly harmful impact on young audiences” and noted “grave concerns about [Meta’s] apparent effort to ensnare children into social media platforms at earlier and earlier ages.”<sup>195</sup> The letter concluded by asking Zuckerberg six “pretty straightforward questions about how the company works and safeguards children and teens on Instagram.”<sup>196</sup>

<sup>195</sup> Letter from Richard Blumenthal, U.S. Senator, to Mark Zuckerberg, Chief Executive Officer of Facebook (Aug. 4, 2021), *available at* <https://www.blumenthal.senate.gov/imo/media/doc/8.4.21%20-%20Facebook%20-%20Mental%20Health%20and%20Kids%20Letter.pdf>.

<sup>196</sup> *Protecting Kids Online: Testimony from a Facebook Whistleblower Hearing before Subcomm. On Consumer Protection, Product Safety, and Data Security* (Oct. 5, 2021), *available at* <https://www.commerce.senate.gov/2021/10/protecting%20kids%20online:%20testimony%20fro>

242. Meta's years-long concealment of its research was revealed just weeks later, when Frances Haugen released internal Meta studies, along with a trove of other internal Meta documents, to the Wall Street Journal.

243. On September 21, 2021, Senator Blumenthal confronted a Meta representative about the conspicuous omissions in Meta's response to his letter:

Last month, on August 4, Senator Blackburn and I wrote to Mark Zuckerberg and asked him specifically about this issue. We asked, and I'm quoting, "Has Facebook's research ever found that its platforms and products can have a negative effect on children's and teens' mental health or well-being such as increased suicidal thoughts, heightened anxiety, unhealthy usage patterns, negative self-image, or other indications of lower well-being?"

It wasn't a trick question. It preceded the reports in the Journal. We had no idea about the whistleblower documents that were ultimately revealed.

Facebook dodged the question. "We are not aware of a consensus among studies or experts about how much screen time is too much."

We are not aware. Well, we all know now that representation was simply untrue.<sup>197</sup>

244. Senator Blumenthal went on to ask the witness, Facebook's Vice President of Privacy & Public Policy, "why did Facebook misrepresent its research on mental health and teens when it responded to me and Senator Blackburn?" After disputing the characterization, Satterfield responded, "The safety and well-being of the teens on our platform is a top priority for the company. We're going to continue to make it a priority. This was important research." Senator Blumenthal then went on: "Why did you conceal it?" Satterfield responded, "we didn't make it public because

[m%20a%20facebook%20whistleblower](https://www.blumenthal.senate.gov/imo/media/doc/8.4.21%20-%20Facebook%20-%20Mental%20Health%20and%20Kids%20Letter.pdf). See also, Letter from Richard Blumenthal, U.S. Senator, to Mark Zuckerberg, Chief Executive Officer of Facebook (Aug. 4, 2021), available at <https://www.blumenthal.senate.gov/imo/media/doc/8.4.21%20-%20Facebook%20-%20Mental%20Health%20and%20Kids%20Letter.pdf>.

<sup>197</sup> Richard Blumenthal, *Blumenthal Demands Facebook Appear at Next Week's Consumer Protection Subcomm. Hearing to Explain Coverup of its Platforms' Negative Impact on Teens and Children* (Sept. 21, 2021), available at <https://www.blumenthal.senate.gov/newsroom/press/release/blumenthal-demands-facebook-appear-at-next-weeks-consumer-protection-subcommittee-hearing-to-explain-coverup-of-its-platforms-negative-impact-on-teens-and-children>.

1 we don't, with a lot of the research we do because we think that is an important way of encouraging  
2 free and frank discussion within the company about hard issues.”<sup>198</sup>

3 245. Meta unilaterally decided to prioritize “free and frank” internal discussion over  
4 honest and transparent responses to direct questions from sitting United States Senators. When it  
5 “dodged, ducked, sidetracked, [and] in effect misled” Senators Blumenthal and Blackburn, Meta  
6 deceived the public via its elected representatives.<sup>199</sup>

7 246. Moreover, Satterfield’s “free and frank discussion” excuse has been contradicted  
8 publicly by Meta employees.

9 247. In her testimony before the Senate, Frances Haugen cited evidence that Meta “is so  
10 scared of even basic transparency that it goes out of its way to block researchers who are asking  
11 awkward questions.”<sup>200</sup> Ms. Haugen further testified that Meta’s culture emphasizes insularity and  
12 promotes the idea that “if information is shared with the public, it will just be misunderstood.”<sup>201</sup>

13 248. This is consistent with reports from Facebook content moderators that there is a  
14 “culture of fear and excessive secrecy” within Meta that “prevent[s] [them] from speaking out.”<sup>202</sup>

15 <sup>198</sup> Richard Blumenthal, *Blumenthal Demands Facebook Appear at Next Week’s Consumer*  
16 *Protection Subcomm. Hearing to Explain Coverup of its Platforms’ Negative Impact on Teens*  
17 *and Children* (Sept. 21, 2021), available at  
18 <https://www.blumenthal.senate.gov/newsroom/press/release/blumenthal-demands-facebook-appear-at-next-weeks-consumer-protection-subcommittee-hearing-to-explain-coverup-of-its-platforms-negative-impact-on-teens-and-children>.

19 <sup>199</sup> *Protecting Kids Online: Testimony from a Facebook Whistleblower Hearing before Subcomm.*  
20 *On Consumer Protection, Product Safety, and Data Security* (Oct. 5, 2021) available at  
21 <https://www.commerce.senate.gov/2021/10/protecting%20kids%20online:%20testimony%20from%20a%20facebook%20whistleblower>; see also *Protecting Kids Online: Testimony from a*  
22 *Facebook Whistleblower Hearing before Subcomm. On Consumer Protection, Product Safety,*  
23 *and Data Security* (Oct. 5, 2021) available at  
24 <https://www.commerce.senate.gov/2021/10/protecting%20kids%20online:%20testimony%20from%20a%20facebook%20whistleblower> (statement by Senator Brian Schatz to Frances Haugen  
25 that he had “a long list of misstatements, misdirections and outright lies from the company”).

26 <sup>200</sup> *Protecting Kids Online: Testimony from a Facebook Whistleblower Hearing before Subcomm.*  
27 *On Consumer Protection, Product Safety, and Data Security* (Oct. 5, 2021) available at  
28 <https://www.commerce.senate.gov/2021/10/protecting%20kids%20online:%20testimony%20from%20a%20facebook%20whistleblower>.

<sup>201</sup> *Protecting Kids Online: Testimony from a Facebook Whistleblower Hearing before Subcomm.*  
*On Consumer Protection, Product Safety, and Data Security* (Oct. 5, 2021) available at  
<https://www.commerce.senate.gov/2021/10/protecting%20kids%20online:%20testimony%20from%20a%20facebook%20whistleblower>.

<sup>202</sup> Zoe Schiffer, *Facebook Content Moderators Call for Company to Put an End to Overly Restrictive NDAs*, *The Verge* (Jul. 22, 2021), available at

249. Notably, Meta's pattern of concealment did not end after Frances Haugen came forward. On September 30, 2021, Antigone Davis, Facebook's Head of Safety, testified before the Senate. Ms. Davis represented that, when Instagram "do[es] ads to young people, there are only three things that an advertiser can target around: age, gender, location. We also prohibit certain ads to young people, including weight-loss ads."<sup>203</sup> She further testified, "We don't allow the sexualization of minors on our platform."<sup>204</sup>

250. Ms. Davis's statements were subsequently proven false by Senator Mike Lee. During an October 2021 hearing, Senator Lee explained that a group called the Technology Transparency Project ("TTP") alerted the U.S. Senate that it had gained Facebook's approval to target a series of harmful ads to up to 9.1 million users between the ages of 13 and 17.<sup>205</sup> While TTP did not actually run the ads, approval from Meta to do so demonstrates that the company allows harmful targeted advertising toward minors. Senator Lee showed three examples of these Meta-approved ads, shown below:<sup>206, 207</sup>

<https://www.theverge.com/2021/7/22/22587757/facebook-content-moderators-ireland-end-restrictive-ndas>.

<sup>203</sup> Subcomm.: *Protecting Kids Online: Facebook, Instagram, and Mental Health Harms Hearing before Subcomm. On Consumer Protection Product Safety, and Data Security* (Sept. 30, 2021), available at <https://www.commerce.senate.gov/2021/9/protecting-kids-online-facebook-instagram-and-mental-health-harms>.

<sup>204</sup> *Protecting Kids Online: Testimony from a Facebook Whistleblower Hearing before Subcomm. On Consumer Protection, Product Safety, and Data Security* (Oct. 5, 2021) available at <https://www.commerce.senate.gov/2021/10/protecting%20kids%20online:%20testimony%20from%20a%20facebook%20whistleblower>.

<sup>205</sup> See *Protecting Kids Online: Testimony from a Facebook Whistleblower Hearing before Subcomm. On Consumer Protection, Product Safety, and Data Security* (Oct. 5, 2021) available at <https://www.commerce.senate.gov/2021/10/protecting%20kids%20online:%20testimony%20from%20a%20facebook%20whistleblower>.

<sup>206</sup> These screen captures were taken from a video of the October 5, 2021 Senate Hearing with witness Frances Haugen. See *Protecting Kids Online: Testimony from a Facebook Whistleblower Hearing before Subcomm. On Consumer Protection, Product Safety, and Data Security* (Oct. 5, 2021) available at <https://www.commerce.senate.gov/2021/10/protecting%20kids%20online:%20testimony%20from%20a%20facebook%20whistleblower>.

<sup>207</sup> *Protecting Kids Online: Testimony from a Facebook Whistleblower Hearing before Subcomm. On Consumer Protection, Product Safety, and Data Security* (Oct. 5, 2021) available at <https://www.commerce.senate.gov/2021/10/protecting%20kids%20online:%20testimony%20from%20a%20facebook%20whistleblower>.





251. The first ad encourages children to “[t]hrow a skittles party like no other” and displays the suggestion against a background of colorful prescription pills. The second ad promotes an “Ana Tip” instructing the viewer to “visit pro-ana sites to feed your motivation and reach your goal” when feeling hungry. The third ad informs the viewer that they “look lonely” and encourages them to “[f]ind your partner now to make a love connection.”

252. Senator Lee stated that based on the Meta Defendants’ approval of these pro-drug, pro-anorexia, pro-sexualization ads targeted to children aged 13 to 17, “[o]ne could argue that it proves that Facebook is allowing and perhaps facilitating the targeting of harmful adult-themed ads to our nation’s children.”<sup>208</sup>

253. In addition to the litany of misrepresentations and omissions identified above, Meta has repeatedly failed to tell the truth about the age of users on Instagram. In statements to Congress and elsewhere, Zuckerberg has represented that Meta does not allow users under the age of 13 to use the product. For example, in testimony before the U.S. House of Representatives Committee on Energy and Commerce, Zuckerberg stated: “There is clearly a large number of people under the

<sup>208</sup> *Protecting Kids Online: Testimony from a Facebook Whistleblower Hearing before Subcomm. On Consumer Protection, Product Safety, and Data Security* (Oct. 5, 2021) available at <https://www.commerce.senate.gov/2021/10/protecting%20kids%20online:%20testimony%20from%20a%20facebook%20whistleblower>.



age of 13 who would want to use a service like Instagram. We currently do not allow them to do that.”<sup>209</sup>

254. However, as discussed further above, Meta has long known that its product is widely used by children under the age of 13. In fact, Meta knows through retrospective cohort analyses that “up to 10 to 15% of even 10 year-olds in a given cohort may be on Facebook or Instagram.”<sup>210</sup>

255. Far from acknowledging the serious defects in its products and warning children and parents of the same, Meta has launched advertising campaigns designed to encourage more children



<sup>209</sup> *Disinformation Nation: Social Media’s Role in Promoting Extremism and Misinformation Hearing Before H. Energy and Commerce Subcomm. on Communications and Technology* 59 (March 25, 2021), available at <https://www.congress.gov/117/meeting/house/111407/documents/HHRG-117-IF16-Transcript-20210325.pdf>; see also *Disinformation Nation: Social Media’s Role in Promoting Extremism and Misinformation Hearing Before H. Energy and Commerce Subcomm. on Communications and Technology* 175 (March 25, 2021), available at <https://www.congress.gov/117/meeting/house/111407/documents/HHRG-117-IF16-Transcript-20210325.pdf> (Zuckerberg: “[O]ur policies on-on the main apps that we offer generally prohibit people under the age of 13 from using the services.”); See also *Transcript of Zuckerberg’s appearance before House committee*, Washington Post (April 11, 2018), [https://www.washingtonpost.com/news/the-switch/wp/2018/04/11/transcript-of-zuckerbergs-appearance-before-house-committee/?utm\\_term=.e7b476fb8ac7&noredirect=on](https://www.washingtonpost.com/news/the-switch/wp/2018/04/11/transcript-of-zuckerbergs-appearance-before-house-committee/?utm_term=.e7b476fb8ac7&noredirect=on) (When asked if it is correct that children can get a Facebook account starting at age 13, Zuckerberg confirmed that it was correct); see also NewSchools Venture Fund, *NewSchools Summit 2011: John Doerr and Mark Zuckerberg on innovation and education* (May 24, 2011), <https://www.youtube.com/watch?v=n03zAOadyMA> (Zuckerberg: “[A]nd so basically, we don’t allow people under the age of 13 on Facebook . . . today we don’t allow people under the age of 13 to sign up”).

<sup>210</sup> *Protecting Kids Online: Testimony from a Facebook Whistleblower Hearing before Subcomm. On Consumer Protection, Product Safety, and Data Security* (Oct. 5, 2021), available at <https://www.commerce.senate.gov/2021/10/protecting%20kids%20online:%20testimony%20from%20a%20facebook%20whistleblower>.

1 to use its products—by touting the purported safety of those products. For example, in a recent  
 2 television ad, Meta claimed that it “build[s] technology that gives you more control and helps keep  
 3 you safe” including through its “industry leading AI” and other “tools that can protect—so you can  
 4 connect.” This advertisement featured children, as in the screenshot below.

5 Other advertising campaigns have similarly touted Meta’s AI as being a feature that contributes to  
 6 its products’ safety—without disclosing the serious defects identified in this Complaint.

7 256. In another example of advertising that promotes use by children, a Meta 2021 online  
 8 advertisement actively highlighted the content available for fifth grade children on its Facebook  
 9 product, highlighting the experience of an art teacher who used Facebook to communicate with  
 10 students during the pandemic—an experience the video noted was “a lot to unpack for little, tiny  
 11 people.”

12 **5. Meta failed to adequately warn about the dangers and harms caused**  
 13 **by Instagram and Facebook, or provide instructions regarding safe**  
 14 **use.**

15 257. Meta has failed to adequately warn adolescent users and parents about the physical  
 16 and mental health risks posed by Instagram and Facebook. These risks include a plethora of mental  
 17 health disorders like compulsive use, addiction, eating disorders, anxiety, depression, insomnia,  
 18 exacerbated executive dysfunction, sexual exploitation from adult users, suicidal ideation, self-  
 19 harm, and death.

20 258. Meta targets adolescent users via advertising and marketing materials distributed  
 21 throughout digital and traditional media that fail to provide sufficient warnings to potential  
 22 adolescent consumers of the physical and mental risks associated with using Facebook and  
 23 Instagram.

24 259. Meta also fails to adequately warn adolescent users during the product registration  
 25 process. At account setup, neither Instagram nor Facebook contain warning labels, banners, or  
 26 conspicuous messaging to adequately inform adolescent users of the known product risks and  
 27 potential physical and mental harms associated with usage. Instead, Meta allows adolescent users,  
 28 including those under the age of 13, to easily create an account (or multiple accounts) and fully  
 access these products.

260. Meta's failure to warn adolescent users continues even as adolescents exhibit problematic signs of addiction to and compulsive use of Facebook or Instagram. For example, Meta does not warn users when their screen time reaches harmful levels or when adolescents are accessing the product habitually.

261. Despite proactively providing adolescent users with countless filtering and editing tools, Meta also does not appropriately warn adolescent users regarding which images have been altered or the mental health harms associated with the heavily filtered images that Meta presents and recommends.

262. Not only does Meta fail to adequately warn users regarding the risks associated with Instagram and Facebook, it also does not provide sufficient instructions on how adolescents can safely use the products.

263. Meta's failure to adequately warn and instruct as set forth herein has proximately caused significant harm to the mental and physical well-being of young users.

**D. SNAP MARKETS AND DESIGNS SNAPCHAT TO ADDICT YOUNG USERS, SUBSTANTIALLY CONTRIBUTING TO THE MENTAL HEALTH CRISIS**

264. Snap Inc. calls itself "a camera company."<sup>211</sup> Its "flagship product, Snapchat, is a camera application that was created to help people communicate through short videos and images. [Snap] calls each of those short videos or images a Snap."<sup>212</sup> Snap's design of its Snapchat product capitalizes on children's increasing attachment to quick, instantaneous exchanges. As Snap's founder and CEO Evan Spiegel has explained, "today... pictures are being used for talking. So when you see your children taking a zillion photos of things that you would never take a picture of,

<sup>211</sup> Snap Inc. Form S-1 Registration Statement (*hereafter* "Form S-1") at 1 (Feb. 2, 2017), <https://www.sec.gov/Archives/edgar/data/1564408/000119312517029199/d270216ds1.htm>; *See also*, Snap – Who We Are, Snap Inc.; ("We believe that reinventing the camera represents our greatest opportunity to improve the way people live and communicate."). <https://careers.snap.com/en-US> ("We believe that reinventing the camera represents our greatest opportunity to improve the way people live and communicate.").

<sup>212</sup> Snap Inc. Form S-1 Registration Statement (*hereafter* "Form S-1") at 1 (Feb. 2, 2017), <https://www.sec.gov/Archives/edgar/data/1564408/000119312517029199/d270216ds1.htm>.

1 it's cos [sic] they're using photographs to talk. And that's why people are taking and sending so  
 2 many pictures on Snapchat every day."<sup>213</sup>

3 265. Spiegel's statement is telling, as Snap has tailored every aspect of its Snapchat  
 4 product to children rather than adults. Snap designed and implemented dangerous features in  
 5 Snapchat that exploit children's need for social acceptance and rewards by pushing its users to  
 6 maximize their use of and engagement with the app. Snap built Snapchat using manipulative  
 7 techniques to compel young users to send an ever-increasing number of photographs and videos,  
 8 and to reward users who maximize their engagement with elevated status. Snap also dangerously  
 9 encourages adolescents to increase engagement on the app indiscriminately, pushing tools to share  
 10 sensitive material with an ever-expanding group of friends and strangers.

11 266. Snapchat's design features cause its young users to suffer increased anxiety,  
 12 depression, disordered eating, sleep deprivation, suicide, and other severe mental and physical  
 13 injuries. Snap knows or should have known this. Snap intentionally designed Snapchat to prey on  
 14 the neuropsychology and behavioral patterns of children to maximize their engagement and  
 15 increase Snap's advertising revenue. Despite this knowledge, Snap continues to update its product  
 16 and add features intentionally designed to entice, exploit, and addict kids, including Snap Streaks,  
 17 trophies, social signifiers and reward systems, quickly disappearing messages, filters, lenses, and  
 18 games.

19 267. Snap knew, or should have known, that its conduct has negatively affected youth.  
 20 Snap's conduct has been the subject of inquiries by the United States Senate regarding Snapchat's  
 21 use "to promote bullying, worsen eating disorders, and help teenagers buy dangerous drugs or  
 22 engage in reckless behavior."<sup>214</sup> Further, Senators from across the ideological spectrum have  
 23  
 24

25 <sup>213</sup> Stuart Dredge, *What is Snapchat? CEO Evan Spiegel explains it all for parents*, The Guardian,  
 26 June 15, 2015, <https://www.theguardian.com/technology/2015/jun/17/what-is-snapchat-evan-spiegel-parents>.

27 <sup>214</sup> Bobby Allyn, *4 Takeaways from the Senate child safety hearing with YouTube, Snapchat and*  
 28 *TikTok*, National Public Radio (Oct. 26, 2021), <https://www.npr.org/2021/10/26/1049267501/snapchat-tiktok-youtube-congress-child-safety-hearing>.

introduced bills that would ban many of Snapchat's features that are particularly addictive to adolescents.<sup>215</sup>

268. Despite these calls for oversight from Congress, Snap has failed to curtail its use of features such as streaks, badges, and other awards that reward users' level of engagement with Snapchat. As described in detail below, Snapchat is a product that causes harm to children, the target audience for whom Snap designed and to whom it promoted its product.

### 1. **Background and overview of Snapchat.**

269. Snapchat was created by three college students in 2011 and first released for iPhones in September 2011. Snapchat quickly evolved from its origin as a disappearing-message chat application after Snap's leadership made design changes and rapidly developed new product features. As a result of its design and implementation of dangerous and addictive features specifically targeting youths (described below), Snapchat quickly became widely used among children.

270. Snap marketed Snapchat as "temporary social media" that would allow users to show a more authentic, unpolished, and spontaneous side of themselves.<sup>216</sup> Snapchat's central and defining feature, the "Snap," allows users to send and receive ephemeral, or "disappearing," audiovisual messages. That feature foreseeably and quickly drove users to exchange sexually explicit "Snaps," sometimes called "sexts" even though they are photos. Because of its brand identity among millennials as the original ephemeral-messaging app, Snapchat almost immediately became known as the "sexting" app—a fact that Snap was or should have been on notice of from public sources.<sup>217</sup>

<sup>215</sup> See Abigail Clukey, *Lawmaker Aims To Curb Social Media Addiction With New Bill*, National Public Radio (Aug. 3, 2019), <https://www.npr.org/2019/08/03/747086462/lawmaker-aims-to-curb-social-media-addiction-with-new-bill>; Social Media Addiction Reduction Technology Act, S. 2314, 116th Cong. (2019); Kids Internet Design and Safety Act, S. 2918, 117th Cong. (2021).

<sup>216</sup> Jenna Wortham, *A Growing App Lets You See It, Then You Don't*, New York Times (Feb. 9, 2013), [https://www.nytimes.com/2013/02/09/technology/snapchat-a-growing-app-lets-you-see-it-then-you-dont.html?\\_r=0](https://www.nytimes.com/2013/02/09/technology/snapchat-a-growing-app-lets-you-see-it-then-you-dont.html?_r=0).

<sup>217</sup> Megan Dickey, *Let's Be Real: Snapchat Is Totally Used For Sexting*, Bus. Insider (Nov. 30, 2012), <https://www.businessinsider.com/snapchat-growth-sexting-2012-11>; Billy Gallagher, *No, Snapchat Isn't About Sexting, Says Co-Founder Evan Spiegel*, TechCrunch (May 12, 2012), <https://techcrunch.com/2012/05/12/snapchat-not-sexting/b> (describing an interview in which a journalist asked the CEO of Snap about the product's potential use for sexting).

271. Snapchat creates images and GIFs for users to incorporate into their videos and picture postings. Snap has also acquired publishing rights to thousands of hours of music and video which it provides to Snapchat users to attach to the videos and pictures that they send.

**2. Snap targets children.**

**a. Snap has designed its Snapchat product to grow use by children to drive the company's revenue.**

272. Within five months of launching, Snapchat had 40,000 users.<sup>218</sup> By May 2012, less than eight months after launching, CEO Evan Spiegel reported that the company was “thrilled” to learn that most of Snapchat’s users were high school students sending “behind-the-back photos of teachers and funny faces” to each other during class. According to Spiegel, Snap’s server data showed peaks of activity during the school day.<sup>219</sup>

273. Snap immediately focused on increasing the product’s frequency of use.<sup>220</sup> By late 2012, Snapchat had over a million active users sending over 20 million Snaps per day.<sup>221</sup> By 2013, Snapchat users were sending over 60 million Snaps per day.<sup>222</sup> By the end of 2022, this number has risen to over 5 billion Snaps per day.<sup>223</sup>

274. As Snap continued to quickly add new features to its product, the number of Snapchat’s daily active users (users who open Snapchat at least once during a 24-hour period)

<sup>218</sup> Ken Auletta, *Get Rich U*, New Yorker (Apr. 30, 2012), <https://www.newyorker.com/magazine/2012/04/30/get-rich-u>.

<sup>219</sup> Team Snapchat, *Let’s Chat*, Snapchat Blog at <http://blog.snapchat.com> (May 9, 2012), available at <https://web.archive.org/web/20120518003029/http://blog.snapchat.com:80/>.

<sup>220</sup> Billy Gallagher, *You Know What’s Cool? A Billion Snapchats: App Sees Over 20 Million Photos Shared Per Day, Releases On Android*, TechCrunch (Oct. 29, 2012), <https://techcrunch.com/2012/10/29/billion-snapchats/>.

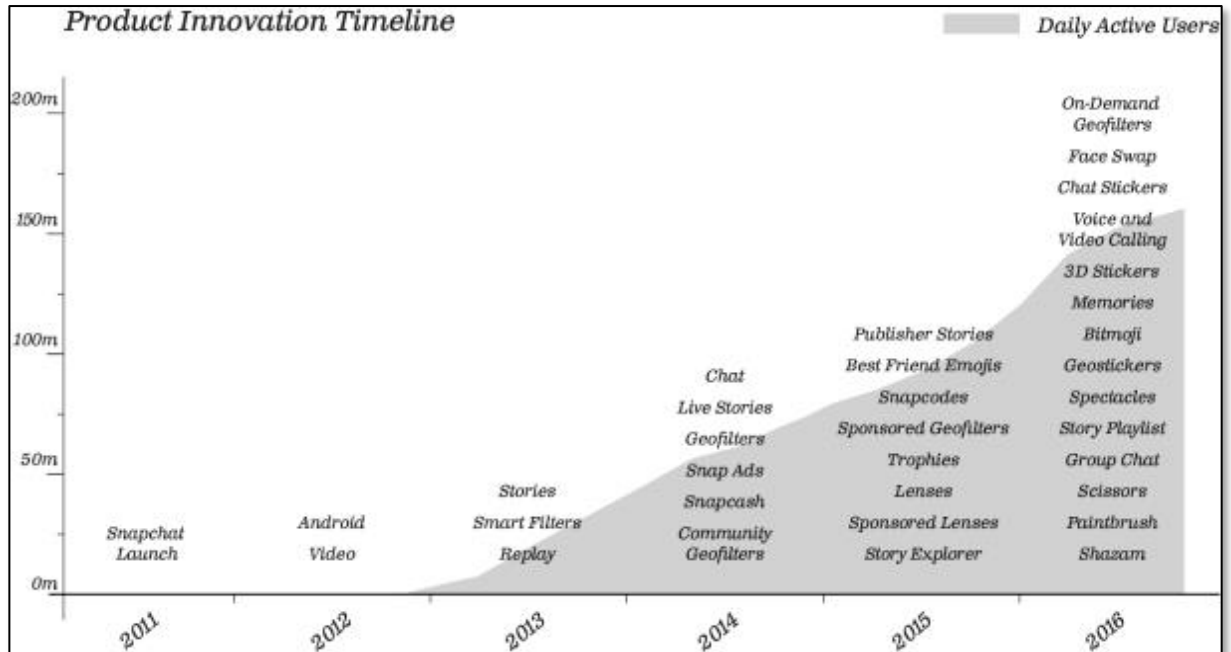
<sup>221</sup> Billy Gallagher, *You Know What’s Cool? A Billion Snapchats: App Sees Over 20 Million Photos Shared Per Day, Releases On Android*, TechCrunch (Oct. 29, 2012), <https://techcrunch.com/2012/10/29/billion-snapchats/>.

<sup>222</sup> Billy Gallagher, *Snapchat Raises \$13.5M Series A Led By Benchmark, Now Sees 60M Snaps Sent Per Day*, TechCrunch (Feb. 9, 2013), <https://techcrunch.com/2013/02/08/snapchat-raises-13-5m-series-a-led-by-benchmark-now-sees-60m-snaps-sent-per-day/>.

<sup>223</sup> Snap Inc. Q4 2022 Investors Meeting Transcript at p. 7 (Jan. 31, 2023), <https://s25.q4cdn.com/442043304/files/transcript/snap-inc.-q4-2022-transcript.pdf>.



rapidly increased.<sup>224</sup> In 2017, Snap reported that its users opened the product more than 18 times a day on average. By 2019, users were opening the product an average of 30 times per day.



275. Today, Snapchat is one of the world's most widely used apps. By its own estimates, Snapchat has 363 million daily users, including 100 million daily users in North America.<sup>226</sup> Snapchat also "reaches 90% of the 13-24 year old population" in over twenty countries, and reaches nearly half of all smartphone users in the United States.<sup>227</sup>

276. Snapchat's explosive growth is driven by its key user demographic, 13-17 year olds. In 2022, 59% of US teens used Snapchat and 15% said they used it "almost constantly."<sup>228</sup>

<sup>224</sup> Snap Inc. Form S-1 Registration Statement (*hereafter* "Form S-1") at 91 (Feb. 2, 2017), <https://www.sec.gov/Archives/edgar/data/1564408/000119312517029199/d270216ds1.htm>.

<sup>225</sup> Snap Inc. Form S-1 Registration Statement (*hereafter* "Form S-1") at 91 (Feb. 2, 2017), <https://www.sec.gov/Archives/edgar/data/1564408/000119312517029199/d270216ds1.htm>.

<sup>226</sup> October 2022 Investor Presentation at 5, Snap Inc. (Oct. 20, 2022), <https://investor.snap.com/events-and-presentations/presentations/default.aspx>.

<sup>227</sup> October 2022 Investor Presentation at 6-7, Snap Inc. (Oct. 20, 2022), <https://investor.snap.com/events-and-presentations/presentations/default.aspx>.

<sup>228</sup> Pew Research Center, Teens, Social Media and Technology 2022 (Aug. 10, 2022), <https://www.pewresearch.org/internet/2022/08/10/teens-social-media-and-technology-2022/>.

277. In 2014, Snap began running advertisements on Snapchat.<sup>229</sup> Snapchat's entire business model revolves around its advertising revenue. According to internal company records, advertisements were pervasive on Snapchat by 2015 and, by 2018, 99% of Snap's total revenue came from advertising. Advertising has accounted for 99% of Snap's revenue each year since 2018.<sup>230</sup> In 2022, Snap's revenue was approximately \$4.6 billion.<sup>231</sup>

278. Snap attracts advertisers by providing them access to the huge universe of Snapchat users and by collecting immense amounts of data on its users, including its pre-teen and teenage users, which it uses to target advertising to those users. Snap makes no secret of this practice, recently acknowledging that it relies "heavily on our ability to collect and disclose data, and metrics to our advertisers so we can attract new advertisers and retain existing advertisers. Any restriction or inability, whether by law, regulation, policy, or other reason, to collect and disclose data and metrics which our advertisers find useful would impede our ability to attract and retain advertisers."<sup>232</sup>

279. Snap's growth in advertising revenues was driven by changes Snap made to Snapchat that incentivized compulsive and addictive use at the expense of its users' health.

280. Snap understands that its user experience must be immersive and all-encompassing in order to maximize its advertising revenue. Indeed, Snap recently admitted to its investors that its revenue could be harmed by, among other things, "a decrease in the amount of time spent on Snapchat, a decrease in the amount of content that our users share, or decreases in usage of our Camera, Visual Messaging, Map, Stories, and Spotlight platforms."<sup>233</sup>

<sup>229</sup> Angela Moscaritolo, *Snapchat Adds 'Geofilters' in LA*, New York, PC Mag. (July 15, 2014), <https://www.pcmag.com/news/snapchat-adds-geofilters-in-la-new-york>.

<sup>230</sup> Snap Inc. Form 10-K at 18 (Dec. 31, 2022), <https://d18rn0p25nwr6d.cloudfront.net/CIK-0001564408/c22ae9bd-7418-456e-82d4-48129de1df54.pdf>.

<sup>231</sup> Snap Inc. Form 10-K at 18 (Dec. 31, 2022), <https://d18rn0p25nwr6d.cloudfront.net/CIK-0001564408/c22ae9bd-7418-456e-82d4-48129de1df54.pdf>.

<sup>232</sup> Snap Inc. Form 10-K at 18 (Dec. 31, 2022), <https://d18rn0p25nwr6d.cloudfront.net/CIK-0001564408/c22ae9bd-7418-456e-82d4-48129de1df54.pdf>.

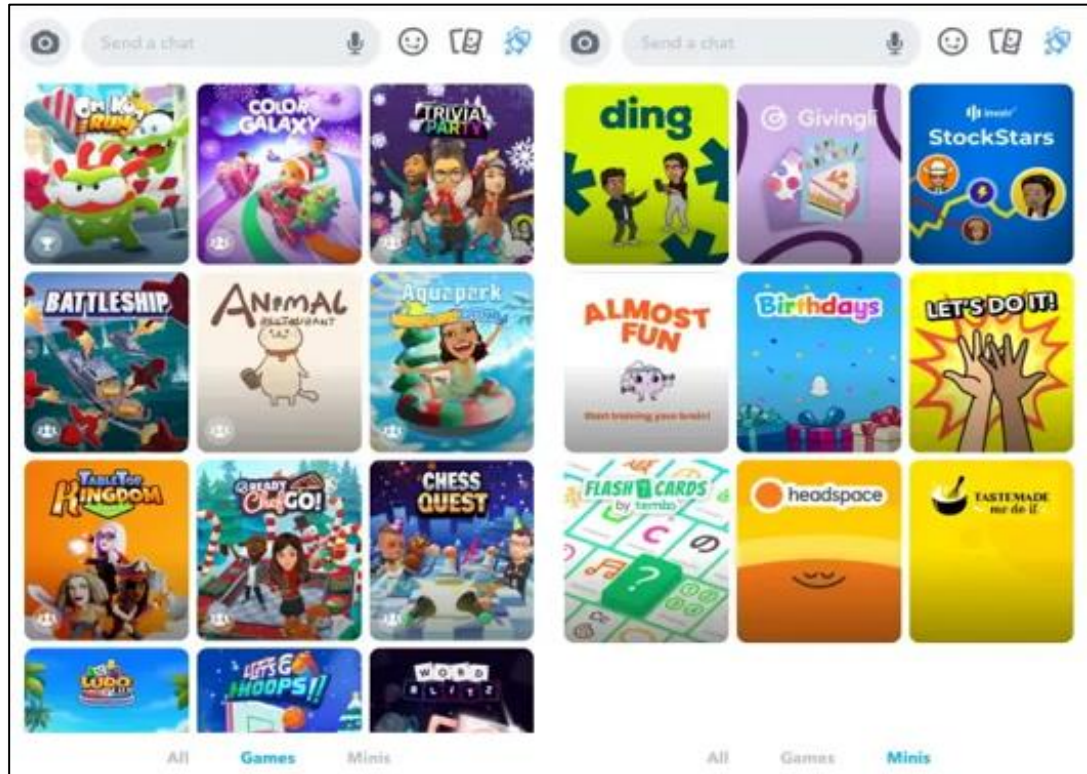
<sup>233</sup> Snap Inc. Form 10-K at 19 (Dec. 31, 2022), <https://d18rn0p25nwr6d.cloudfront.net/CIK-0001564408/c22ae9bd-7418-456e-82d4-48129de1df54.pdf>.

b. Snap promotes Snapchat to children.

281. Snap specifically promotes Snapchat to children because they are a key demographic for Snap’s advertising business.

282. In its first post on its website, Snapchat observed that “[t]o get a better sense of how people were using Snapchat and what we could do to make it better, we reached out to some of our users. *We were thrilled to hear that most of them were high school students* who were using Snapchat as a new way to pass notes in class—behind-the-back photos of teachers and funny faces were sent back and forth throughout the day.”<sup>234</sup>

283. As shown in this capture of a Snapchat feature page created by Snap, Snap uses bright colors, cartoonish designs, and other features that appeal to younger audiences.



284. Similarly, in an October 2019 interview, Snap’s CEO explained that “we’ve seen a lot of engagement with our 13-34 demographic, which for us is strategically a critical demographic, not only because that’s a demographic that enjoys using new products but also because I think they

<sup>234</sup> Team Snapchat, *Let’s Chat*, Snapchat Blog at <http://blog.snapchat.com> (May 9, 2012), <https://web.archive.org/web/20120518003029/http://blog.snapchat.com:80/>.

1 represent, really, the future . . . So that's obviously been a group that's been really fun to build for,  
2 and really it started because those are our friends.”<sup>235</sup>

3 285. Snap touts to advertisers its ability to use Snapchat to reach children. In a December  
4 2022 statement to advertisers, Snap claimed that “Snapchat delivers on the emotions that Gen Z  
5 seeks and it does so consistently across the platform in areas like Discover, Stories and the  
6 Camera.”<sup>236</sup> To prove that, Snapchat “used a neuroscience measurement called Immersion to  
7 measure reactions to different brand messaging—specifically brand purpose messaging vs. non-  
8 brand purpose messaging. Immersion captures attention and emotional resonance through  
9 variations in heart rate rhythm collected by smartwatches.”<sup>237</sup> Per Snapchat, “[a]ny brand or  
10 marketer can get on any app and *start targeting Gen Z [emphasis added]*. After all, Gen Z is  
11 digitally native. But to effectively connect and engage with this generation, that takes a different,  
12 more intentional type of platform- Snapchat.”<sup>238</sup>

13 286. Advertisers have responded, pouring into Snapchat money clearly intended for  
14 advertising aimed at children. Brands like candy manufacturer Sour Patch Kids, children's toy store  
15 ToysRUs, and sugary beverage seller Kool-Aid have all run successful advertising campaigns  
16 through Snapchat, frequently using augmented reality tools developed in collaboration with  
17 Snapchat.

24 \_\_\_\_\_  
25 <sup>235</sup> Evan Spiegel, *Co-Founder and CEO of Snap, Inc.*, Goldman Sachs, at 4:43-6:23. (Oct. 2,  
2019), <https://www.youtube.com/watch?v=PQiKv-GCQ-w>.

26 <sup>236</sup> Snap for Business, *What Does Gen Z Want From Brands?* Dec. 15, 2022),  
<https://forbusiness.snapchat.com/en-US/blog/what-does-gen-z-want>.

27 <sup>237</sup> Snap for Business, *What Does Gen Z Want From Brands?* Dec. 15, 2022),  
<https://forbusiness.snapchat.com/en-US/blog/what-does-gen-z-want>

28 <sup>238</sup> Snap for Business, *What Does Gen Z Want From Brands?* Dec. 15, 2022),  
<https://forbusiness.snapchat.com/en-US/blog/what-does-gen-z-want>.



287. Snapchat’s age verification systems are defective. For the first two years of its existence, Snap did not even purport to limit user access to those 13 or older.<sup>239</sup> Users were not required to input a date of birth when creating an account.<sup>240</sup>

288. In 2013, Snap belatedly introduced age limits (which, as explained below, it does not effectively enforce). At the same time, Snap launched a new feature called “Snapkidz” aimed at and designed to attract younger children users, while hedging against the potential user loss due to the new age limits. The Snapkidz feature allowed children under the age of 13 to take filtered photos, draw on them, save them locally on their devices, send them to others, and upload them to other apps.<sup>241</sup> Although this version prevented children from sharing “Snaps” on the product, it nonetheless exposed children to Snapchat’s features, which normalized and acclimatized children to using Snapchat. In addition, nothing prevented children from creating an unrestricted account

<sup>239</sup> Team Snapchat, *iOS Update: Bug Fixes and More!*, Snapchat Blog (June 22, 2013), <https://web.archive.org/web/20130627073951/http://blog.snapchat.com:80/>.

<sup>240</sup> Team Snapchat, *iOS Update: Bug Fixes and More!*, Snapchat Blog (June 22, 2013), <https://web.archive.org/web/20130627073951/http://blog.snapchat.com:80/>.

<sup>241</sup> Team Snapchat, *iOS Update: Bug Fixes and More!*, Snapchat Blog (June 22, 2013), <https://web.archive.org/web/20130627073951/http://blog.snapchat.com:80/>.



1 with a false date of birth on Snapchat and using the product outside the SnapKidz’s limited  
2 features.<sup>242</sup>

3 289. The SnapKidz feature was discontinued in or around 2016. Snap now purports to  
4 prohibit users under the age of 13. But nothing prohibits the minor user from simply altering their  
5 birthdate during the same session where they were just denied an account for being an underage  
6 user. Snap could have implemented robust, effective age verification protocols. Instead, it has set  
7 up its business and product so that nothing is done to verify the age of its users or to enforce its age  
8 limitations. Snap could, but intentionally does not, verify the phone number, email address, or  
9 birthdate used to create accounts, and it allows users to create multiple accounts using the same  
10 email address or phone number.

11 290. Snap’s executives have admitted that Snapchat’s age verification “is effectively  
12 useless in stopping underage users from signing up to the Snapchat app.”<sup>243</sup> Not surprisingly,  
13 underage use is widespread. As of 2021, 13% of children ages 8-12 use Snapchat.<sup>244</sup>

14 291. Once Snapchat is installed on a user’s mobile phone, the product continues to  
15 download and install updates, design changes, and new features from Snapchat directly to its users.

16 292. Similarly, the absence of effective age-verification measures means that users who  
17 are older can claim to be children—which is an obvious danger to the actual children on Snap’s  
18 product.

22  
23 <sup>242</sup> See Larry Magid, *Snapchat Creates SnapKidz – A Sandbox for Kids Under 13*, Forbes (June  
24 23, 2013), <https://www.forbes.com/sites/larrymagid/2013/06/23/snapchat-creates-snapkidz-a-sandbox-for-kids-under-13/?sh=7c682a555e5a>; Anthony Cuthbertson, *Snapchat admits its age verification system does not work*, Independent (Mar. 19, 2019),  
25 <https://www.independent.co.uk/tech/snapchat-age-verification-not-work-underage-ageid-a8829751.html>.

26 <sup>243</sup> Isobel Asher Hamilton, *Snapchat admits its age verification safeguards are effectively useless*,  
27 Bus. Insider (Mar. 19, 2019), <https://www.businessinsider.com/snapchat-says-its-age-verification-safeguards-are-effectively-useless-2019-3>.

28 <sup>244</sup> Victoria Rideout *et al.*, *Common Sense Census: Media use by tweens and teens*, 2021 at 5,  
Common Sense Media, [https://www.commonsensemedia.org/sites/default/files/research/report/8-18-census-integrated-report-final-web\\_0.pdf](https://www.commonsensemedia.org/sites/default/files/research/report/8-18-census-integrated-report-final-web_0.pdf).



1                   **3. Snapchat is designed to addict children through psychological**  
 2                   **manipulation.**

3           293. Once Snap entices children to use its product, it uses a series of product features that  
 4 are designed to addict children. As laid out below, those features can be broadly grouped into two  
 5 categories that exploit techniques discussed earlier in this Complaint. The first are social metrics  
 6 and other similar psychological manipulation techniques. The second are features designed to  
 7 encourage endless passive consumption of content on the Snapchat product. These features, in  
 8 tandem with each other and the other harmful features described throughout this section and  
 9 Complaint, induce addiction, compulsive use, and other severe mental and physical harm to the  
 10 child users of the Snapchat product.

11                   **a. Snap designed Snapchat to drive compulsive use through a set**  
 12                   **of social metrics and other manipulation techniques that induce**  
                   **compulsive use.**

13           294. Snapchat includes a variety of social metrics—such as Snapscores, Snap Streaks,  
 14 and Snap Awards—that reward users when they engage with Snapchat and punish them when they  
 15 fail to engage with Snapchat. Internal research by Snap has found these psychological manipulation  
 16 techniques are highly effective at instilling anxiety about not using Snapchat frequently enough—  
 17 and competitor research has confirmed these features are addictive. In tandem with Intermittent and  
 18 Variable Rewards (“IVR”), like push notifications and design choices that make it difficult to stop  
 19 using the Snapchat product, these induce compulsive use of the product by children.

20           295. These manipulation techniques are so effective in part because Snapchat’s  
 21 disappearing messages themselves create a compulsion to engage with the Snapchat product.  
 22 Because Snaps typically disappear within ten seconds of being viewed, users feel compelled to  
 23 reply immediately. Snap activates the psychological desire to reciprocate the social gesture of  
 24 sending a Snap.<sup>245</sup> Snapchat also tells users each time they receive a Snap by pushing a notification  
 25 to the recipient’s device. These notifications are designed to prompt users to open Snapchat  
 26 repetitively, increasing the overall time spent on the app.

27  
 28 <sup>245</sup> Nir Eyal, *The Secret Psychology of Snapchat*, Nir & Far (Apr. 14, 2015),  
<https://www.nirandfar.com/psychology-of-snapchat/>.

(i) **Snapcores**

296. Snapcores were one of the earliest features of the Snapchat product. Almost as soon as Snapchat launched, Snap gave users the ability to draw and color on Snaps and add a short text caption before sending. An Android version of the app, video sharing, and user profiles with “Snapcores” soon followed.<sup>246</sup>

297. Originally called “Hiscore,” Snapscore keeps a running profile score based on a user’s Snapchat activity levels, such as the number of Snaps sent and received or Stories posted.<sup>247</sup> The sole purpose of Snapscore is to increase product use and drive revenue.<sup>248</sup>



298. Although Snap does not disclose precisely how Snapcores work, sending and receiving a Snap increases the score by one point. Interacting with other product features provides additional points. A user’s Snapscore is visible on their profile, serves as a signifier of the user’s “worth,” and encourages users to further engage with Snapchat’s features to increase their score. Snapcores are important to users, especially young users, because they operate as a form of social validation, similar to an Instagram “Like.” Google has reported millions of searches for “How to

<sup>246</sup> Snap Inc. Form S-1 Registration Statement (*hereafter* “Form S-1”) at 91 (Feb. 2, 2017), <https://www.sec.gov/Archives/edgar/data/1564408/000119312517029199/d270216ds1.htm>; Katie Notopoulos, *The Snapchat Feature That Will You’re your Life*, BuzzFeed News (Dec. 5, 2012), □

<sup>247</sup> Snapchat Support, *What is a Snap Score?*, (“Your Snapchat score is determined by a super-secret, special equation... 🤖”) <https://support.snapchat.com/en-US/a/my-score> (“Your Snapchat score is determined by a super-secret, special equation... 🤖”).

<sup>248</sup> Brad Barbz, \*2020 NEW \* *How To Increase Snapscore By Up To 1000 Per Minute On IOS And Android - Working 2020*, YouTube (Dec. 4, 2019), [https://www.youtube.com/watch?v=Mo\\_tajuofLA](https://www.youtube.com/watch?v=Mo_tajuofLA).

1 improve Snap score.” YouTube contains numerous videos with titles like “How to Increase  
2 Snapchat Score Fast.”<sup>249</sup>

3 299. Snapscores reward users who post videos that are viewed extensively. This  
4 encourages many to use Snapchat in harmful and dangerous ways, to increase the virality of their  
5 videos and increase their Snapscore. As more users engage with and forward that video to others,  
6 its creator is awarded with an increased Snapscore. Snapchat’s rewards incentivize this dangerous  
7 behavior, resulting too often in physical harm or humiliation in the obsessive pursuit of social  
8 significance.

### 9 (ii) Trophies, Charms, and Stickers

10 300. Snap has also designed Snapchat to include user rewards, including trophies and  
11 other social recognition signals, similar to “Likes” on other apps. These features are highly  
12 addictive and drive compulsive use.

13 301. “Trophies” are emojis awarded for achieving engagement milestones or performing  
14 certain activities, such as increasing one’s Snapscore, sending creative Snaps, or posting a live  
15 story. A user’s “Trophies” are displayed in a “trophy box” viewable by their friends. Snap designed  
16 this feature to encourage users to share their videos and posts with the public, promote greater use  
17 of Snapchat, and deepen young users’ addiction to and compulsive use of the product.

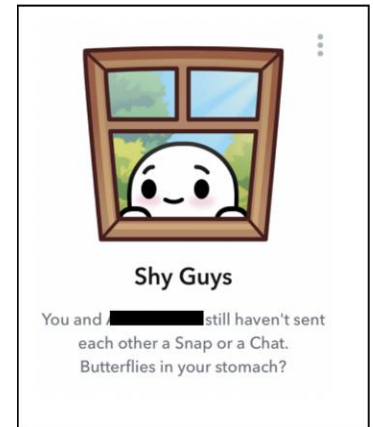
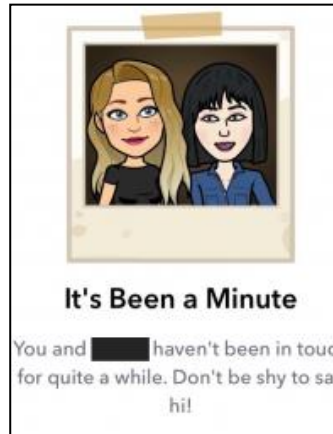
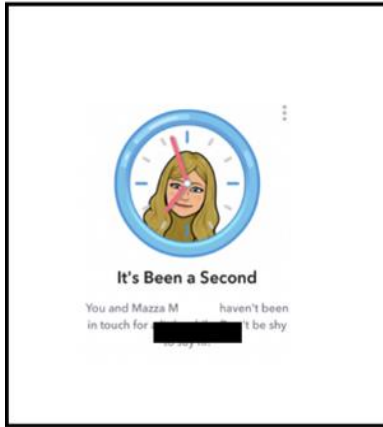
18 302. In 2020, Snap phased out Trophies and replaced them with “Charms.” Unlike  
19 Trophies, where users were rewarded for unlocking individual accomplishments like sending 1,000  
20 selfies, Charms reward users for achieving certain milestones in their relationship with other users.  
21 Typically, the more users interact with one another, the more Charms they unlock in their  
22 relationship. Charms are private and viewable only by users’ mutual contacts.

23 303. For example, if two users are at the top of each other’s friends list, meaning they  
24 exchange frequent Snaps, they may unlock a “BFF (Best Friends Forever)” Charm. Conversely,  
25 the “It’s Been Forever” and “It’s Been a Minute” Charms may be awarded to friends who are  
26 infrequently in contact, to prompt their engagement with one another on Snapchat. Although there

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27 <sup>249</sup> FozTech, *How to Increase Snapchat Score Fast! (100% Works in 2023)*, YouTube (Oct. 1,  
28 2019), <https://www.youtube.com/watch?v=m7s0hvQdTok> (*How to Increase Snapchat Score Fast*  
has 4.2 million views as of January 10, 2023).

are a number of different Charms awarded for various reasons, all of them encourage user interaction, furthering engagement and buy-in to Snap's reward system. This in turn exacerbates social-comparison harms and undermines self-esteem.



304. Snap incorporates other product features that, like Charms and Trophies, serve no functional purpose, but make Snapchat more appealing and lead to excessive use by children and teens. For example, Snap has developed images called “Stickers” for users to decorate the pictures or videos they post. Snap also offers app-specific emojis and animations that users can apply to their photos or videos.

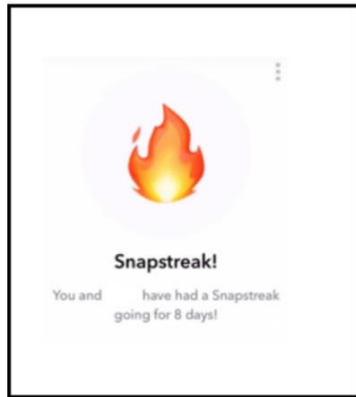
305. Snap designed each of these features to function as rewards for increased engagement, exploit underage users’ desire for social validation, and ultimately compel them to use Snapchat excessively. Because many of these rewards and scores are visible to others, these features tap into adolescents’ deep-seated need for acceptance. By exploiting this need, Snap increases time spent engaging with its product and thereby its profits.

### (iii) Snap Streak

306. The “Snap Streak” is unique to Snapchat and is an addictive feature “especially to teenagers.”<sup>250</sup> A Snap Streak is designed to measure a user’s Snapchat activity with another user.

<sup>250</sup> See Cathy Becker, *Experts warn parents how Snapchat can hook in teens with streaks*, ABC News (July 27, 2017), <https://abcnews.go.com/Lifestyle/experts-warn-parents-snapchat-hook-teens-streaks/story?id=48778296>; Avery Hartmans, *These are the sneaky ways apps like Instagram, Facebook, Tinder lure you in and get you ‘addicted’*, Bus. Insider (Feb. 17 2018), <https://www.businessinsider.com/how-app-developers-keep-us-addicted-to-our-smartphones-2018-1#snapchat-uses-snapstreaks-to-keep-you-hooked-13>; see generally Virginia Smart & Tyana Grundig, *‘We’re designing minds’: Industry insider reveals secrets of addictive app trade*, CBC (Nov. 3, 2017), <https://www.cbc.ca/news/science/marketplace-phones-1.4384876>; Julian

Two users achieve a Snap Streak when they exchange at least one Snap in three consecutive 24-hour periods. When the Streak is achieved, users receive a fire emoji next to their profile avatar. Over time, users may be rewarded with additional emojis signifying their Streak. If users reach a Streak of 100 days, for example, each receives a 100 emoji.



307. Snap Streak emojis are similar to Charms in that they reward users for interaction and are viewable only by mutual friends.

308. It is a matter of common knowledge in the social media industry that the Snap Streak product feature is designed to be addictive. Nonetheless, Snap continues to provide this feature to its adolescent users.

309. Worse still, to manufacture deeper addiction to its product, Snap sends notifications to users with an hourglass emoji when Streaks are about to expire—to create extra urgency, nudge users to keep their Streaks alive, and maintain a system where a user must “check constantly or risk missing out.”<sup>251</sup>

Morgans, *The Secret Ways Social Media is Built for Addiction*, Vice (May 17, 2017), <https://www.vice.com/en/article/vv5jkb/the-secret-ways-social-media-is-built-for-addiction>.

<sup>251</sup> Lizette Chapman, *Inside the Mind of a Snapchat Streaker*, Bloomberg (Jan. 30, 2017), <https://www.bloomberg.com/news/features/2017-01-30/inside-the-mind-of-a-snapchat-streaker>.



310. This feature is particularly effective with teenage users since Streaks are “a vital part of using the app and their social lives as a whole.”<sup>252</sup> Some children become so obsessed with maintaining their Streaks that they give their friends access to their accounts when they may be away from their phone for a day or more.<sup>253</sup> Aware of how important maintaining a Snap Streak is to its users, Snap has even launched a special form on its support website allowing users who lost their streak to petition to get it back.<sup>254</sup>

311. Snap Streaks contribute to feelings of social pressure and anxiety when users lose or break a Streak. Researchers have found that losing a Streak can cause feelings of betrayal for some users, especially girls, who reported “negative” feelings when losing a Streak with one of their friends.<sup>255</sup>

312. Streaks are important to users. However, these design features do not enhance the communication function of the product. Instead, they exploit users’ susceptibility to social pressure and to the compulsive accumulation of other rewards, including Snap Score points and Charms.

<sup>252</sup> Avery Hartmans, *These are the sneaky ways apps like Instagram, Facebook, Tinder lure you in and get you ‘addicted’*, Bus. Insider (Feb. 17, 2018), <https://www.businessinsider.com/how-app-developers-keep-us-addicted-to-our-smartphones-2018-1#snapchat-uses-snapstreaks-to-keep-you-hooked-13>.

<sup>253</sup> Caroline Knorr, *How to resist technology addiction*, CNN (Nov. 9, 2017), <https://www.cnn.com/2017/11/09/health/science-of-tech-obsession-partner/index.html>; Jon Brooks, *7 Specific Tactics Social Media Companies Use to Keep You Hooked*, KQED (June 9, 2017), <https://www.kqed.org/futureofyou/397018/7-specific-ways-social-media-companies-have-you-hooked>.

<sup>254</sup> Snapchat Support, Contact Form, <https://support.snapchat.com/en-US/i-need-help?start=5695496404336640>.

<sup>255</sup> Hristoya et al., “Why did we lose our snapchat streak?” Social media gamification and metacommunication. *Computers in Human Behavior Reports*, 5, 100172 (2022).



(iv) **Push Notifications**

313. In addition to Snapchat’s in-app reward features, Snap also sends push notifications and emails to encourage addictive engagement and increase use. Notifications are triggered based on information Snap collects from, and about, its users. Snap “pushes” these communications to users excessively and at disruptive times of day. Snap has even designed the format of these notifications to pull users back onto its app by preying on their fear of missing out—never mind the consequences to their health and well-being.

(v) **Impediments to Discontinuing Use**

314. Snap has intentionally and defectively designed its products so child users face significant navigational obstacles and hurdles when trying to delete or deactivate their Snapchat accounts, despite the ease with which a user can create one. For example, when a user elects to delete their account, they cannot do so on demand. The data and the account are preserved for 30 days. In addition, after initiating the deletion process, the user is presented with a black screen depicting a crying emoji and a message that reads, “Your account will be deactivated, which means friends won’t be able to contact you on Snapchat. You’ll also lose any Chats you’ve saved and Snaps and Chats you haven’t opened.”<sup>256</sup>

315. This cumbersome process prioritizes user retention and continued use over the well-being of Snapchat’s users.

**b. Snap’s defective features are designed to promote compulsive and excessive use.**

(i) **“Stories” and the “Discover” Interface**

316. In October 2013, Snap added “Stories,” a feature that generates a compilation of its users’ designated photos and videos that expire in 24 hours and can be viewed an unlimited number of times by friends or anyone on Snapchat if the user sets the visibility setting to Everyone.<sup>257</sup>

<sup>256</sup> See Snapchat Support, *How do I delete my Snapchat account?*, <https://support.snapchat.com/en-US/a/delete-my-account1>

<sup>257</sup> Darrell Etherington, *Snapchat Gets Its Own Timeline With Snapchat Stories, 24-Hour Photo & Video Tales*, TechCrunch (Oct. 3, 2013), <https://techcrunch.com/2013/10/03/snapchat-gets-its-own-timeline-with-snapchat-stories-24-hour-photo-video-tales/>.

1 Within eight months of launching the Stories feature, users were viewing more Stories per day than  
2 Snaps.<sup>258</sup>

3 317. Snap's Stories feature includes a running view count and list of viewers for each  
4 Story, both of which provide users with dopamine-triggering feedback that encourages users to  
5 make their Stories visible to everyone in order to increase the view count. The view count, view  
6 list, and ephemeral nature of Stories also reinforces the principle of reciprocity and compels users  
7 to monitor Stories, so they do not miss out.

8 318. In 2016, Snap updated the Stories feature to include recommendations based on an  
9 algorithm that considers "proximity, time, interestingness, or other such metrics."<sup>259</sup> That same  
10 year, Snap introduced ads between Stories and updated Stories to include "Auto-Advance," a  
11 feature that starts a new Story automatically after the preceding one ends.<sup>260</sup> This creates an endless  
12 cycle of consumption that Snap knows, or should know, is detrimental to users' mental health.<sup>261</sup>  
13 Nevertheless, Snap designed and implemented this feature because it is proven to induce a flow  
14 state that increases product use, regardless of whether the use is healthy or enjoyable.  
15 Unsurprisingly, one study of over 2,000 UK residents found 68% of respondents who used  
16 Snapchat reported that "the platform prevented them from sleeping."<sup>262</sup>

17 319. Since then, Snap has built upon its Stories interface with "Discover," a feature that  
18 showcases a continuous feed of advertisements to Snapchat's captive audience. Using Discover,  
19 users may subscribe to an advertiser's "channel" and watch its Stories; as well as see what their  
20 friends are watching.

21 <sup>258</sup> Ellis Hamburger, *Surprise: Snapchat's most popular feature isn't snaps anymore*, The Verge  
22 (Jun. 20, 2014), <https://www.theverge.com/2014/6/20/5827666/snapchat-stories-bigger-than-snaps-electric-daisy-carnival>

23 <sup>259</sup> Snapchat, Inc., *Content Collection Navigation and Autoforwarding*, US 20170289234,  
24 USPTO (Mar. 29, 2016), <https://patents.justia.com/patent/20170289234>.

25 <sup>260</sup> James Vincent, Snapchat will start showing ads between your friends' stories, The Verge (Jun.  
26 14, 2016), <https://www.theverge.com/2016/6/14/11930386/snapchat-ads-api-stories>; Snapchat,  
27 Inc., *Content Collection Navigation and Autoforwarding*, US 20170289234, USPTO (Mar. 29,  
28 2016), <https://patents.justia.com/patent/20170289234>.

<sup>261</sup> See, e.g., Gino Gugushvili et al., Facebook use intensity and depressive symptoms: a  
moderated mediation mode of problematic Facebook use, age, neuroticism, and extraversion at 3,  
BMC Psych. 10, 279 (2022), <https://doi.org/10.1186/s40359-022-00990-7>.

<sup>262</sup> Frazer Deans, *Curb Your Snapchat Addiction*, <https://www.wholesome.design/advent-2018/2-curb-your-snapchat-addiction/>.

320. Both Stories and Discover encourage user engagement with Snapchat and increase the amount of time users spend using the product by making the product more addictive at the expense of users' mental health and well-being.

(ii) "Spotlight"

321. In November 2020, Snap launched "Spotlight," a feature that pushes to users "an endless feed" that Snap curates from its 300 million daily Snapchat users.<sup>263</sup> Spotlight functions and appears nearly identical to TikTok, with similar addictive qualities and harms. Snapchat's Spotlight feature allows users to make videos that anyone can view, and Snap pays users whose Spotlight videos go viral, thus serving as yet another reward system that encourages user engagement. After Snap introduced Spotlight, user time spent on the product increased by over 200%.<sup>264</sup>

322. In February 2022, Snap CEO Evan Spiegel told investors that users are spending more time on Spotlight than almost any other aspect of Snapchat. A year prior, Snap announced "Spotlight Challenges," which provided users with cash prizes for creating Spotlight videos with specific lenses, sounds, or topics, further integrating the user into the Snap ecosystem. Snap claims it paid out more than \$250 million in cash prizes to Spotlight Challenge participants in 2021 alone.<sup>265</sup>

**4. Snap designed Snapchat with features that harm children directly or expose children to harm.**

323. Snapchat further contains a number of features which foreseeably cause children harm above and beyond harms inherent in addiction and compulsive use.

<sup>263</sup> Salvador Rodriguez, *Snap is launching a competitor to TikTok and Instagram Reels*, CNBC (Nov. 23, 2020), <https://www.cnbc.com/2020/11/23/snap-launching-a-competitor-to-tiktok-and-instagram-reels.html>.

<sup>264</sup> See *Snap Q4 Earnings Beat Estimates, User Growth Aids Top Line*, Zacks Equity Research (Feb. 5, 2021), <https://finance.yahoo.com/news/snap-q4-earnings-beat-estimates-153003950.html>.

<sup>265</sup> Mia Sato, *Snapchat will put ads within stories and share the money with creators* (Feb. 14, 2022), <https://www.theverge.com/2022/2/14/22927656/snapchat-snap-stars-stories-ads>.

a. **Disappearing “Snaps” and “My Eyes Only” encourage destructive behavior among Snap’s teen users.**

324. As discussed above, Snapchat’s “Snap” feature allows users to send and receive ephemeral, or “disappearing,” audiovisual messages. Prior to sending a Snap, a user can designate the period of time—typically no more than a few seconds—that the recipient will be allowed to view the Snap. According to Snapchat, once the allotted time expires, the Snap disappears forever.

325. Snapchat’s limited display time reduces teenagers’ communication apprehension and encourages users to send photos depicting deviant behavior.<sup>266</sup> Sexting is a prime example, but cyberbullying, underage alcohol consumption, and illicit use of narcotics are also commonly the subject of Snaps. A 2016 survey of pre-teens and teens ages 12-17 found that “dick pics” were among some of the unwanted content that users—predominantly females—received while using the app.<sup>267</sup>

326. Disappearing Snaps do not operate as advertised. Although designed to disappear after an allotted time, recipients possess the ability to save or record them at will. This is particularly harmful to adolescents, who rely on Snap’s representations when taking and sending photos, and who only learn after the fact that recipients have the means to save photos or videos. In some cases, this can lead to sexual exploitation.

327. Snap could, but does not, warn users, including children and teenagers, that Snaps may not necessarily disappear.

328. In addition, and especially for pre-teen users, Snaps are defective because Snap’s parental controls are ill-equipped to mitigate the risks posed by this feature. As set forth below, even with parental controls activated, parents are unable to view a Snap’s content and therefore cannot adequately protect their children and/or deter their children from engaging in dangerous behavior in conjunction with sending Snaps.

<sup>266</sup> See Vaterlaus et al., “Snapchat is more personal”: An exploratory study on Snapchat behaviors and young adult interpersonal relationships, *Computers in Human Behavior*, 62, 594-601 (2016).

<sup>267</sup> Kofoed et al., (2106) *A snap of intimacy: Photo-sharing practices among young people on social media*, *First Monday* 21(11), <https://doi.org/10.5210/fm.v21i11.6905>.

329. “My Eyes Only” is yet another defective feature of Snapchat. This feature enables and encourages users to hide harmful content from their parents in a special tab that requires a passcode. Content cannot be recovered from “My Eyes Only”—allegedly even by Snap itself. Snap designed “My Eyes Only” knowing it would likely be used to store potentially illegal and injurious photos and images like sexts and CSAM.<sup>268</sup> This dangerous product feature unreasonably increases the risk that Snapchat’s adolescent users, many under age 13, will be targeted and sexually exploited and/or trafficked by child predators.

330. The content in “My Eyes Only” self-destructs if a user attempts to access the hidden folder with the wrong code. “My Eyes Only” has no practical purpose or use other than to hide potentially dangerous content from parents and/or legal owners of the devices used to access Snapchat. Moreover, while this information and evidence should be in Snap’s possession and control, it has designed this feature in a way that causes the permanent loss of relevant, material, and incriminating evidence.

**b. Snapchat’s “Snap Map” feature endangers children.**

331. Snapchat also contains a feature called “Snap Map” that allows users to share their location with their followers (and the public) on an activity-level-based, color-coded heatmap. At all relevant times, this feature has been available to all users, including minors. Although users can disable “Snap Map,” this is not a default setting.

332. Snap Map is an unreasonably dangerous feature for underage users because it provides strangers with their locations, exposing children and adolescents to potential harm. Researchers have also found that Snap Map causes feelings of sadness and anxiety for some users, as they jealously view their friends’ locations.<sup>269</sup> For young people especially, such social comparison often leads to distress and depression.

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<sup>268</sup> Salvador Rodriguez, *Snapchat Finally Acknowledges the Existence of Sexting With ‘Memories’* The latest app update includes a tool called “My Eyes Only” that lets you privately store sensitive photos and videos, Inc., (Jul. 6, 2016), <https://www.inc.com/salvador-rodriguez/snapchat-memories-sexting.html>.

<sup>269</sup> See Dunn et al., “Oh, Snap!”: A Mixed-Methods Approach to Analyzing the Dark Side of Snapchat, *The Journal of Social Media in Society*, 9(2), 69-104 (2020).

333. Snap Map also functions as a social metric. A report by 5Rights, a United Kingdom-based children's online safety advocacy group highlighted the experience of John, a 14 year old boy, who explained that "[h]aving more connections on Snapchat makes his Snap Map look more crowded, which he can then show off to people in real life and therefore appear more 'popular.'"<sup>270</sup>

**c. Snapchat's "Quick Add" feature endangers children.**

334. Through a feature known as "Quick Add," Snap recommends new, sometimes random friends, similar to Facebook's "People You Might Know" feature. Suggestions are formulated using an algorithm that considers users' friends, interests, and location. Quick Add encourages users to expand their friend base to increase their Snapscore by interacting with an ever-expanding group of friends, which--in addition to expanding their time online--can result in exposure to dangerous strangers. Of particular concern, until 2022, Quick Add's suggestions included profiles for users Snap knew to be between the ages of 13-17, meaning that Quick Add could, and in fact did, recommend that a minor and adult user connect.

335. Criminal users interested in selling drugs to minors have utilized the Quick Add feature to find random friends interested in making a purchase.

336. Despite these dangers Snap designed Quick Add because it increases the odds that users will add friends, send more Snaps, and spend more time using Snapchat.

337. In 2022, Snap revised the Quick Add feature to limit the friend suggestions promoted to minor users. For those aged 13 to 17, Quick Add would only suggest friends who shared a certain number of common friends with the minor user. Snap did not disclose how many common friends must be shared by each user to satisfy this safety feature. Further, this modification to the Quick Add feature still does not prohibit the connection of minors with adults.

**d. Snapchat's Lenses and Filters features promote negative appearance comparison.**

338. Snap also incorporates numerous custom-designed lenses and filters, which allow users to edit and overlay augmented-reality special effects and sounds on their Snaps. Many of

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<sup>270</sup> 5Rights Foundation, Pathways: How digital design puts children at risk (July 2021), <https://5rightsfoundation.com/uploads/Pathways-how-digital-design-puts-children-at-risk.pdf>.



1 Snapchat's lenses and filters change users' appearance and face, creating unrealistic, idealized  
2 versions that cause profound body image issues in teenagers, especially girls.

3 339. Examples of these features include the Smoothing Filter, which blurs facial  
4 imperfections and evens out skin tone; Bold Makeup, which adds makeup over the user's face,  
5 blurs imperfections, and evens out skin tone; Sunkissed and Cute Freckles, which adds freckles  
6 over the nose and cheeks, blurs imperfections, evens out skin tone, and adjusts skin color; Face and  
7 Body Mellow Glow, which smooths the face and body and adjusts skin color; and Fluffy Eyelashes,  
8 which alters the shape of the user's face by lifting their eyes and adding more pronounced cheek  
9 bones. The common theme among all of these filters is that they remove the subjects' perceived  
10 blemishes to create the perfect "selfie."

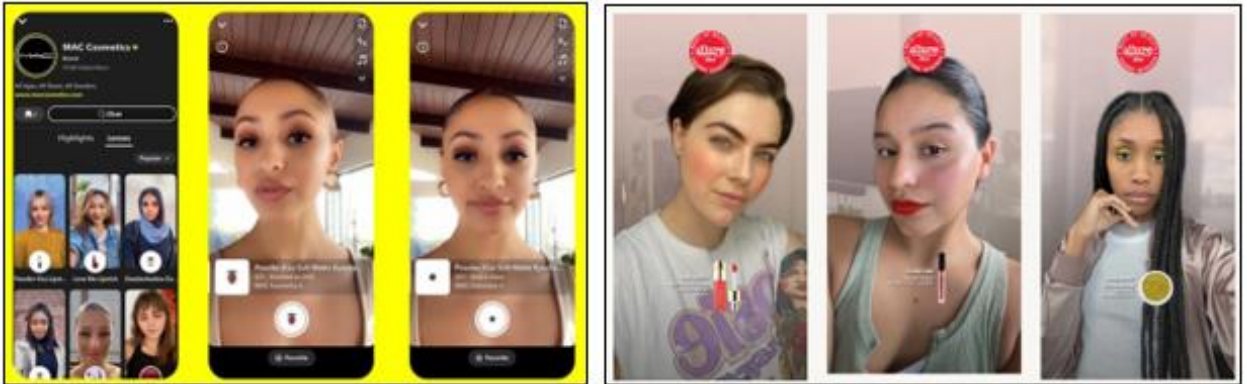


18  
19 340. A 2017 study found that these features made Snapchat one of the worst social media  
20 products for the mental health of children and adolescents, behind only Instagram.<sup>271</sup> In recent  
21 years, plastic surgeons have reported an increase in requests for alterations that correspond to  
22 Snapchat's filters. This has led researchers to coin the term "Snapchat Dysmorphia," in which the  
23 effect of Snapchat's filters triggers body dysmorphic disorder.<sup>272</sup> The rationale underlying this  
24 disorder is that beauty filters on Snapchat create a "sense of unattainable perfection" that leads to

25 <sup>271</sup> Kara Fox, *Instagram worst social media app for young people's mental health*, CNN (May 19,  
26 2017), <https://www.cnn.com/2017/05/19/health/instagram-worst-social-network-app-young-people-mental-health/index.html>.

27 <sup>272</sup> Chen et al., *Association Between Social Media and Photograph Editing Use, Self-esteem, and*  
28 *Cosmetic Surgery Acceptance*, JAMA Facial Plastic Surgery, 2019; See also Nathan Smith &  
Allie Yang, *What happens when lines blur between real and virtual beauty through filters*, ABC  
News (May 1, 2021), <https://abcnews.go.com/Technology/lines-blur-real-virtual-beauty-filters/story?id=77427989>.

self-alienation and damages a person's self-esteem.<sup>273</sup> One social psychologist summarized the effect as “the pressure to present a certain filtered image on social media,” which can certainly play into [depression and anxiety] for younger people who are just developing their identities.”<sup>274</sup>



341. Snap also created and promoted “smart filters” that allowed users to stamp date/time, temperature, battery life, altitude, and speed on their Snaps.<sup>275</sup> These filters utilize sensor data on users’ devices to provide the desired filter stamp.

342. A particularly dangerous smart filter is the speed filter, which from 2013 to 2021 allowed users to record their real-life speed and overlay that speed onto Snaps. Snap knew, or should have known, that the speed filter served no purpose other than to motivate, incentivize, and/or encourage users to drive at dangerous speeds in violation of traffic and safety laws. Indeed, soon after launching its speed filter, the feature became a viral game for users—particularly teenage users—to capture photos and videos of themselves driving at 100 miles-per-hour or more. Tragically, the quest to capture a 100 mile-per-hour Snap caused a number of fatal vehicle accidents involving teens and young adults.<sup>276</sup>

<sup>273</sup> Chen et al., *Association Between Social Media and Photograph Editing Use, Self-esteem, and Cosmetic Surgery Acceptance*, JAMA Facial Plastic Surgery, 2019; See also Nathan Smith & Allie Yang, *What happens when lines blur between real and virtual beauty through filters*, ABC News (May 1, 2021), <https://abcnews.go.com/Technology/lines-blur-real-virtual-beauty-filters/story?id=77427989>.

<sup>274</sup> Nathan Smith & Allie Yang, *What happens when lines blur between real and virtual beauty through filters*, ABC News (May 1, 2021), <https://abcnews.go.com/Technology/lines-blur-real-virtual-beauty-filters/story?id=77427989>.

<sup>275</sup> Karissa Bell, *Snapchat adds an altitude filter to show how high you are*, (Aug.19, 2016), <https://mashable.com/article/snapchat-altitude-filter-how-to>.

<sup>276</sup> *Did Snapchat play role in deaths of 3 young women?*, ABC6 Action News (Feb. 16, 2016), <https://6abc.com/action-news-investigation-snapchat-fatal-car-crash-philadelphia/1196846/>; Manpreet Darroch, *Snapchat and driving . . . you could be sending your last snap* (Apr.25, 2016),

1           343. Snap knew, or should have known, its speed filter created an unreasonable risk of  
2 harm to its users and the public. Despite this knowledge, however, as well as pleas from the public  
3 to disable the filter, Snap refused to remove the filter from its application until 2021.<sup>277</sup>

4           344. By including features like lenses, cartoonish filters, and stamps to attract ever-  
5 increasing numbers of children to use and engage with its product, Snap has knowingly created a  
6 product that leads to excessive use by children and teens and causes them to suffer harm.

7                       **5. Snap has implemented ineffective and misleading parental controls,**  
8                       **further endangering children.**

9           345. Snap has also designed and set up Snapchat with inadequate parental controls.

10          346. From Snapchat's launch in 2011 until August 2022, Snapchat had no parental  
11 controls even though its core user base was under the age of 18 and a significant number of those  
12 users were under the age of 13.

13          347. In August 2022, Snap introduced the "Family Center." The features and processes  
14 offered through the Family Center are woefully inadequate to protect teen and pre-teen users. The  
15 Family Center allows a parent or guardian to install Snapchat on their phone and then link to the  
16 child's account. The parent or guardian can then see who the child user is communicating with.  
17 However, the content of these communications remains hidden and still disappears after the allotted  
18 time. In addition, the Family Center does not allow a parent or guardian to block minors from  
19 sending private messages, control their child's use or engagement with many of Snapchat's product  
20 features, control their child's use of Snapchat's geolocation feature, or control who their child may  
21 add to their friend list. Finally, the Family Center fails to help a parent monitor their child's account  
22 when the child has secretly created a Snapchat account without the parents' knowledge in the first  
23 place.

24  
25 [http://www.youthforroadsafety.org/news-blog/news-blog-item/t/snapchat-and-driving-hellip-you-](http://www.youthforroadsafety.org/news-blog/news-blog-item/t/snapchat-and-driving-hellip-you-could-be-sending-your-last-snap)  
26 [could-be-sending-your-last-snap](http://www.youthforroadsafety.org/news-blog/news-blog-item/t/snapchat-and-driving-hellip-you-could-be-sending-your-last-snap); *The Most Dangerous App on Your Phone*,  
*DistractedDriverAccidents.com*, [https://distracteddriveraccidents.com/the-most-dangerous-app-](https://distracteddriveraccidents.com/the-most-dangerous-app-on-your-phone/)  
27 [on-your-phone/](https://distracteddriveraccidents.com/the-most-dangerous-app-on-your-phone/).

28 <sup>277</sup> Bobby Allyn, *Snapchat Ends 'Speed Filter' That Critics Say Encouraged Reckless Driving*,  
NPR (June 17, 2021), [https://www.npr.org/2021/06/17/1007385955/snapchat-ends-speed-filter-](https://www.npr.org/2021/06/17/1007385955/snapchat-ends-speed-filter-that-critics-say-encouraged-reckless-driving)  
[that-critics-say-encouraged-reckless-driving](https://www.npr.org/2021/06/17/1007385955/snapchat-ends-speed-filter-that-critics-say-encouraged-reckless-driving).

1                   **6. Snap facilitates the spread of CSAM and child exploitation.**

2           348. Despite being marketed to and designed for children, Snapchat includes a number  
3 of features that promote and dramatically exacerbate sexual exploitation, the spread of CSAM,  
4 sextortion, and other socially maladaptive behavior that harms children. Snap knows or should have  
5 known that its product features are unsafe for children and that it fails to implement reasonable,  
6 child-protective safeguards. For example, by failing to age-restrict its Discover feature, Snapchat's  
7 algorithm has recommended inappropriate sexual content to adolescent users. By promoting the  
8 connection between minors and adults, it is facilitating child exploitation and predation. By failing  
9 to implement parental controls that give parents true control over their children's activity, Snap  
10 allows harmful interactions with predators to continue unnoticed.

11           349. Like the other Defendants, as a direct consequence of the child exploitation that  
12 occurs on its platform, Snapchat is tainted by illegal material that promotes and facilitates the  
13 continued sexual exploitation of minors. Snap receives value in the form of increased user activity  
14 for the dissemination of CSAM on its product.

15           350. Furthermore, Snapchat's disappearing-content design, while appealing to minors,  
16 makes it more difficult for parents to monitor their children's social-media activity. This feature  
17 also contributes to a sense of impunity for many users, encouraging and fomenting exploitation and  
18 predatory behavior, which has been observed in multiple empirical studies.<sup>278</sup> According to these  
19 studies, Snapchat users believe their conduct is hidden and accordingly feel empowered to engage  
20 in criminal behavior through the product without fear of getting caught.

21           351. These feelings are promoted by design. Snap intends for the product's disappearing  
22 messaging to entice users to share highly personal photos and information that many users would  
23 otherwise feel uncomfortable sharing on "higher-stake" apps.<sup>279</sup> In short, this design choice  
24 encourages and allows minors to share harmful, illegal, and sexually explicit images while  
25 providing predators with a vehicle to recruit victims. Studies have also found that the "close ties"

26 <sup>278</sup> *Snapchat by the Numbers: Stats, Demographics & Fun Facts*, Omnicore (Mar. 2, 2022),  
27 <https://www.omnicoreagency.com/snapchat-statistics/>.

28 <sup>279</sup> See Evelyn Lopez et al., *The Gratifications of Ephemeral Marketing Content, the Use of Snapchat by the Millennial Generation and Their Impact on Purchase Motivation*, Global Bus. Rev. (2021), <https://journals.sagepub.com/doi/pdf/10.1177/09721509211005676>.

1 generated between teenagers on Snapchat foster the conditions for grooming and other predatory  
2 behavior.

3 352. As a result, Snapchat is one of the go-to products for sexual predators.<sup>280</sup>

4 353. In 2014, Snap introduced “Snapcash,” a peer-to-peer mobile payment service.  
5 Snapcash provided a way for users to pay for private content with little to no oversight.<sup>281</sup> Snapcash  
6 enabled CSAM and other sexual exploitation, as users were paid with Snapcash to send, receive,  
7 create, publish, save, accept, or otherwise participate in CSAM. It also enabled predators to extort  
8 cash from adolescent users by threatening to disseminate CSAM to other users.

9 354. Snapcash was abruptly removed from Snapchat in 2018 as users were sending  
10 sexually explicit photos and using Snapcash for payment.<sup>282</sup>

11 355. Snapchat also allows users to voice or video call one another in the app.<sup>283</sup> This  
12 feature is dangerous when paired with the many others that permit easy access to minors by  
13 predators, such as Quick Add and Snap Map. It allows predators to call and video chat with minors  
14 in private, with virtually no evidence of what was exchanged. Predators use this function to identify  
15 children willing to add and speak with a stranger, and then prey on the child’s vulnerabilities.

16 356. Collectively, these product features promulgate communication and conduct with a  
17 false sense of intimacy between users and encourage predators to use Snapchat to target children  
18 for grooming, sexual exploitation, sextortion, and CSAM.

19 357. In November 2019, a bipartisan group of Senators sent a letter to leading tech  
20 companies, including Snapchat. The letter sought answers about the online sexual grooming of  
21  
22

23 <sup>280</sup> See, e.g., Rebecca Woods, *What Are The Dangers Of Snapchat To Avoid?*, PhoneSpector  
(June 16, 2021), <https://phonespector.com/blog/what-are-the-dangers-of-snapchat-to-avoid/>.

24 <sup>281</sup> Kurt Wagner, *Snapchat to Let You Send Money to Friends, Thanks to Square*, Vox,  
25 <https://www.vox.com/2014/11/17/11632930/snapchat-to-let-you-send-money-to-friends-thanks-to-square>.

26 <sup>282</sup> Christian Hargrave, *Snapcash Goes Away After Excessive Feature Misuse*, App Developer  
27 Magazine (July 25, 2018), <https://appdevlopermagazine.com/snapcash-goes-away-after-excessive-feature-misuse/>.

28 <sup>283</sup> Snapchat Support, *How to Start a Video Chat on Snapchat*, <https://support.snapchat.com/en-GB/a/video-chat#:~:text=You%20can%20Video%20Chat%20with,into%20a%20full%2Dscreen%20Chat>.



1 children and CSAM detection technologies.<sup>284</sup> The following year, ParentsTogether, a national  
 2 parent group, delivered a petition from 100,000 parents to Snap demanding that the company do  
 3 more to “protect children from sexual abuse and exploitation” on Snapchat.<sup>285</sup> The petition listed  
 4 numerous examples of widespread online sexual grooming of children, including: a high school  
 5 coach in New Mexico who used Snapchat to extort sexual videos from several girls as young as  
 6 fourteen; a Cleveland man who posed as a therapist and blackmailed a thirteen-year-old girl into  
 7 sending him sexual videos and photos; and a Virginia man who was arrested for running a  
 8 sextortion ring on Snapchat, coercing children into sending sexually explicit material.<sup>286</sup>

9 358. In response, Snap announced that by Fall of 2020, it would deploy technology in  
 10 addition to Microsoft’s PhotoDNA to help stop the spread of CSAM through its product.

11 359. By failing to utilize these technologies until late 2020, Snap harmed adolescent users  
 12 as its product contributed to child exploitation, sextortion, and the spread of CSAM.

13 360. In addition, while Snapchat allows users to report harmful images or videos, they  
 14 cannot specifically report CSAM that is sent to a user via direct messaging, including from another  
 15 user’s camera roll.

16 361. Snapchat’s disappearing messages cannot be reported at all.

17 362. While Snap states that it is using “technology to identify *known* illegal images and  
 18 videos of CSAM and report them to NCMEC,” it does not address how Snapchat’s design  
 19 contributes to the ongoing proliferation of CSAM materials and the sexual exploitation of its  
 20 adolescent users.

21 363. Utilizing the data and information it collects about Snapchat’s users, Snap could  
 22 detect, report, and take actions to prevent instances of sexual grooming, sextortion, and CSAM  
 23 distribution.

24 <sup>284</sup> *Letter to Sundar Pichai and 36 other Tech Companies by Senate Committee* (Nov. 18, 2019),  
 25 <https://www.blumenthal.senate.gov/imo/media/doc/11.18.19%20-%20Google%20-%20CSAM.pdf>.

26 <sup>285</sup> *Snapchat: Prevent Pedophiles from Sharing Abuse Videos*, <https://parents-together.org/snapchat-petition>.

27 <sup>286</sup> *Snapchat: Prevent Pedophiles from Sharing Abuse Videos*, <https://parents-together.org/snapchat-petition>.  
 28



1           364. Despite receiving numerous reports regarding how its product's features contribute  
2 to child exploitation, Snap has elected to keep many of these features in place.<sup>287</sup> It has done so  
3 because removing them would significantly diminish Snapchat's popularity and negatively impact  
4 profits.

5           365. Notwithstanding these glaring flaws, Snap advertises and promotes its product as  
6 safe and fun. Snap's Vice President of Global Public Policy, Jennifer Stout, stated in written  
7 testimony to a Senate Subcommittee that Snap takes "into account the unique sensitivities and  
8 considerations of minors when we design products"<sup>288</sup> when, in fact, Snap intentionally designed  
9 its product to promote compulsive and excessive use and help underage users conceal information  
10 from their parents. Stout claimed that Snap makes it harder for strangers to find minors when, in  
11 fact, Snapchat's "Quick Add" feature is responsible for introducing minors to complete strangers,  
12 and its "Snap Map" feature has enabled threats, exploitation, and location of minors by complete  
13 strangers. Likewise, Snap's Head of Global Platform Safety, Jacqueline Beauchere, represented to  
14 the public that "Snapchat is designed for communications between and among real friends; it  
15 doesn't facilitate connections with unfamiliar people like some social media platforms."<sup>289</sup> But  
16 again, this is not true and/or historically was not the case.

17           366. In addition, Snap knows or should have known, that its products facilitate and  
18 encourage the production, possession, distribution, receipt, transportation, and dissemination of  
19 millions of materials that exploit children and violate child pornography laws. Snap further knows,  
20 or should have known, that its product facilitates the production, possession, distribution, receipt,  
21 transportation, and dissemination of materials that depict obscene visual representations of the  
22 sexual abuse of children.

23  
24 <sup>287</sup> See, e.g., Zak Doffman, *Snapchat Has Become A 'Haven For Child Abuse' With its "Self-*  
25 *Destructing Messages'*, Forbes (May 26, 2019),  
<https://www.forbes.com/sites/zakdoffman/2019/05/26/snapchats-self-destructing-messages-have-created-a-haven-for-child-abuse/?sh=411b8e1d399a>.

26 <sup>288</sup> Snap's Senate Congressional Testimony - Our Approach to Safety, Privacy and Wellbeing,  
27 <https://values.snap.com/news/senate-congressional-testimony-our-approach-to-safety-privacy-and-wellbeing>.

28 <sup>289</sup> *Snap's Meet Our Head of Global Platform Safety*, <https://values.snap.com/news/meet-our-head-of-global-platform-safety>.

1                   7.     **Snap failed to adequately warn about the harms its product causes or**  
2                   **provide instructions regarding safe use.**

3             367.    Since Snap's inception, it has failed to warn adolescent users about its products'  
4             physical and mental health risks. These risks include, but are not limited to, addiction, compulsive  
5             and excessive use, sexual exploitation by adult users, dissociative behavior, social isolation, and an  
6             array of mental health disorders like body dysmorphia, anxiety, depression, and insomnia.

7             368.    Snap targets adolescent users via advertising and marketing materials distributed via  
8             digital and traditional media, including expensive advertisements placed during high-profile  
9             sporting events. Snap fails to warn the targets of these ads—often minors—about the physical and  
10            mental risks associated with using Snapchat.

11            369.    Snap further fails to warn adolescent users during the product registration process.  
12            At account setup, Snap's product contains no warning labels, banners, or conspicuous messaging  
13            to adequately inform adolescent users of the known risks and potential physical and mental harms  
14            associated with usage of its product. Instead, Snap allows adolescent users to easily create an  
15            account (or multiple accounts) and fully access the product.

16            370.    Snap's lack of adequate warnings continues after an adolescent has the Snapchat  
17            product. Snap does not adequately inform adolescent users that their data will be tracked, used to  
18            help build a unique algorithmic profile, and potentially sold to Snap's advertising clients, who will  
19            in turn use the data to target and profile the user.

20            371.    Alarmingly, Snap also does not warn adolescent users before facilitating adult  
21            connections and interactions that adult predators use its product. It also fails to instruct adolescent  
22            users on ways to avoid unknown adults on Snap.

23            372.    Snap also fails to warn adolescent users who exhibit problematic signs of addiction  
24            or are habitually and compulsively accessing the app. Instead, Snap utilizes push notifications to  
25            encourage engagement with Snapchat.

26            373.    In addition, despite proactively providing adolescent users with countless filtering  
27            and editing tools, Snap does not warn its adolescent users regarding the mental health harms  
28            associated with those heavily filtered images.

**E. BYTEDANCE MARKETS AND DESIGNS ITS TIKTOK TO ADDICT YOUNG USERS, SUBSTANTIALLY CONTRIBUTING TO THE MENTAL HEALTH CRISIS**

374. Since its launch, TikTok has grown exponentially. In late 2021, its owner and creator ByteDance publicly stated that TikTok had 1 billion active global users, up from 55 million in early 2018 and 700 million in mid-2020.<sup>290</sup>

375. A large swath of TikTok's user base is comprised of American children. In July 2020, TikTok reported that more than one-third of its 49 million daily users in the United States were 14 or younger.<sup>291</sup> More recently, a 2022 Pew Research Center survey reported that 67% of American teenagers (age 13-17) use TikTok, with most American teenagers (58%) using the product daily. Among teenage TikTok users, a quarter say they use the site or app almost constantly.<sup>292</sup> In another recent report, more than 13% of young users declared they "wouldn't want to live without" TikTok.<sup>293</sup>

376. TikTok's capture of the American youth market is no accident, but instead the result of a carefully executed campaign. Early on, Alex Zhu, one of TikTok's creators, recognized that "[t]eenagers in the U.S. [were] a golden audience" for this emerging social media product.<sup>294</sup> To cash in on this gold, ByteDance implemented a series of product features designed to attract and addict young users. As Zhu explained in 2019, "[e]ven if you have tens of millions of users, you

<sup>290</sup> Jessica Bursztynsky, *TikTok says 1 billion people use the app each month*, CNBC (Sept. 27, 2021), <https://www.cnbc.com/2021/09/27/tiktok-reaches-1-billion-monthly-users.html>.

<sup>291</sup> Raymond Zhong & Sheera Frenkel, *A Third of TikTok's U.S. Users May Be 14 or Under, Raising Safety Questions*, N.Y. Times (Aug. 14, 2020), <https://www.nytimes.com/2020/08/14/technology/tiktok-underage-users-ftp.html>.

<sup>292</sup> Emily Vogels *et al.*, *Teens, Social Media and Technology 2022*, Pew Rsch. Ctr. (Aug. 10, 2022), <https://www.pewresearch.org/internet/2022/08/10/teens-social-media-and-technology-2022/>.

<sup>293</sup> Victoria Rideout *et al.*, *Common Sense Census: Media use by tweens and teens, 2021* at 31, Common Sense Media (2022), [www.commonsensemedia.org/sites/default/files/research/report/8-18-census-integrated-report-final-web\\_0.pdf](http://www.commonsensemedia.org/sites/default/files/research/report/8-18-census-integrated-report-final-web_0.pdf).

<sup>294</sup> Paul Mozur, *Chinese Tech Firms Forced to Choose Market: Home or Everywhere Else*, N.Y. Times (Aug. 9, 2016), <https://www.nytimes.com/2016/08/10/technology/china-homegrown-internet-companies-rest-of-the-world.html>.

1 have to keep them always engaged.”<sup>295</sup> This engagement has come at the cost of young users’  
2 health.

3 **1. Background and overview of TikTok.**

4 377. In 2012, Beijing-based technologist Zhang Yiming paired up with an American  
5 venture capitalist, Matt Huang, to launch ByteDance and its first product Jinri Toutiao (“Today’s  
6 Headlines”), which utilized A.I. to gather and present world news to users on a single feed.

7 378. Following the success of its first product, ByteDance created Douyin in 2016, a  
8 music-based app loosely modeled on the popular app Musical.ly. Musical.ly was a critical hit in  
9 the U.S. as American teens gravitated to the platform, which allowed users, including minor users,  
10 to create 15-second videos of themselves lip-syncing, dancing, or goofing around to popular songs  
11 and movie scenes, and then post them to a scrollable feed for other users to see.

12 379. In 2017, ByteDance launched TikTok, a version of Douyin for the non-Chinese  
13 market, and acquired Musical.ly, which by then boasted a user base of almost 60 million monthly  
14 active users, for \$1 billion. Nine months later, ByteDance merged its newly acquired app into its  
15 existing product, and a global version of TikTok was born.

16 380. Douyin is a version of TikTok that is exclusively for Chinese users. ByteDance’s  
17 design of Douyin is profoundly different than TikTok. Douyin serves its Chinese users educational  
18 and patriotic content and limits their use to just 40 minutes per day.<sup>296</sup> TikTok, in sharp contrast,  
19 has no usage limits and is designed to encourage addictive and compulsive use. Far from promoting  
20 educational content, TikTok’s algorithm instead actively sends its young American users down a  
21 harmful rabbit hole of artificially filtered “ideal” body images and dangerous viral challenges.

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24  
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26 <sup>295</sup> Biz Carson, *How A Failed Education Startup Turned into Musical.ly, The Most Popular App*  
27 *You’ve Probably Never Heard Of*, Bus. Insider (May 28, 2016),  
<https://www.businessinsider.com/what-is-musically-2016-5> (emphasis added).

28 <sup>296</sup> Sapna Maheshwari, *Young TikTok Users Quickly Encounter Problematic Posts, Researchers*  
Say, N.Y. Times (Dec. 14, 2022), <https://www.nytimes.com/2022/12/14/business/tiktok-safety-teens-eating-disorders-self-harm.html>.

2. **ByteDance intentionally encourages youth to use its product and then leverages that use to increase revenue.**

381. ByteDance has designed and aggressively marketed TikTok, the harmful and addictive version of Douyin, to attract young Americans.

382. Like the other Defendants' products, TikTok depends on advertising revenue, which has boomed. TikTok was projected to receive \$11 billion in advertising revenue in 2022, over half of which is expected to come from the United States.<sup>297</sup>

383. The initial iteration of TikTok allowed users to lip sync pop music by celebrities who appealed primarily to teens and tweens (e.g., Selena Gomez and Ariana Grande). It labeled folders with names attractive to youth (e.g., "Disney" and "school"); and included in those folders songs such as "Can You Feel the Love Tonight" from the movie "The Lion King," "You've Got a Friend in Me" from the movie "Toy Story," and other renditions covering school-related subjects or school-themed television shows and movies.<sup>298</sup>

384. ByteDance also specifically and intentionally excluded videos that would not appeal to young Americans, instructing TikTok moderators that videos of "senior people with too many wrinkles" should not be permitted on users' "For You" pages because such content was "much less attractive [and] not worth[] . . . recommend[ing]."<sup>299</sup>

385. Even TikTok's sign-up process demonstrates that young users are what ByteDance values most. In 2016, the birthdate for those signing up for the app defaulted to the year 2000 (i.e., 16 years old).<sup>300</sup>

<sup>297</sup> Jessica Bursztynsky, *TikTok says 1 billion people use the app each month*, CNBC (Sept. 27, 2021), <https://www.cnbc.com/2021/09/27/tiktok-reaches-1-billion-monthly-users.html>; Bhanvi Staija, *TikTok's ad revenue to surpass Twitter and Snapchat combined in 2022*, Reuters (Apr. 11, 2022), <https://www.reuters.com/technology/tiktoks-ad-revenue-surpass-twitter-snapchat-combined-2022-report-2022-04-11/>.

<sup>298</sup> Complaint for Civil Penalties, Permanent Injunction, and Other Equitable Relief ("Musical.ly Complaint") at p. 8, ¶¶ 26–27, *United States v. Musical.ly*, 2:19-cv-01439-ODW-RAO (C.D. Cal. Feb. 27, 2019) Dkt. # 1.

<sup>299</sup> Sam Biddle et al., *Invisible Censorship: TikTok Told Moderators to Suppress Posts by "Ugly" People and the Poor to Attract New Users*, Intercept (Mar. 15, 2020), <https://theintercept.com/2020/03/16/tiktok-app-moderatorsusers-discrimination/>.

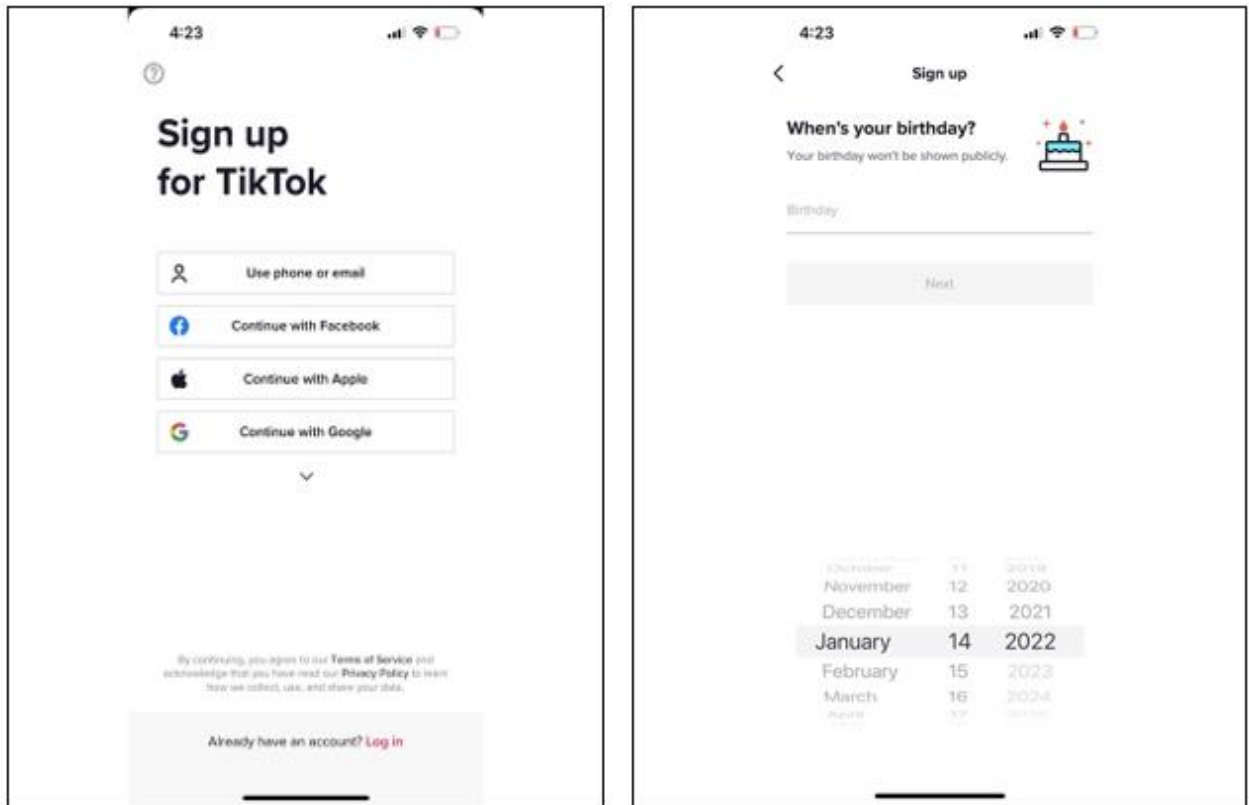
<sup>300</sup> Melia Robinson, *How to Use Musical.ly, The App With 150 million Users That Teens Are Obsessed With*, Bus. Insider (Dec. 7, 2016), <https://www.businessinsider.com/how-to-use-musically-app-2016-12>.

3. **ByteDance intentionally designed product features to addict children and adolescents.**

386. TikTok's growth among young Americans has been further enabled by its defective age verification and parental control procedures, which allow children under 13 unfettered access to the app.

a. **TikTok's age-verification measures are defective.**

387. When a user first opens TikTok, they are prompted to "Login in to TikTok" or "Sign up" for an account using a phone number or email address. TikTok then asks, "When's your birthday?"



388. ByteDance does not verify the age that TikTok users report. Nor does it use any method to verify that users who acknowledge they are minors have the consent of their parents or legal guardians to use the product. In fact, at least as of 2020, TikTok still had not developed a company position on age verification.

389. ByteDance has designed TikTok so users can circumvent TikTok's age restrictions by using TikTok without creating an account. TikTok allows users, no matter what age, to "browse



1 as [a] guest,” and watch TikTok’s “For You” page while TikTok’s algorithm collects data about  
2 that user and their viewing behavior.<sup>301</sup>

3 390. ByteDance knows that many U.S. TikTok users under the age of 13 fail to report  
4 their birth dates accurately.<sup>302</sup>

5 391. In 2019, the FTC acted on this admission and alleged that ByteDance failed to  
6 comply with COPPA.<sup>303</sup>

7 392. TikTok settled the FTC claims, agreeing to a then-record civil COPPA penalty and  
8 several forms of injunctive relief intended to protect children who use the product.<sup>304</sup>

9 393. To comply with the terms of that settlement, ByteDance created “TikTok for  
10 Younger Users,” a “limited app experience” for users under the age of 13.<sup>305</sup> “TikTok for Younger  
11 Users” does not permit users to “share their videos, comment on others’ videos, message with users,  
12 or maintain a profile or followers.”<sup>306</sup> However, users can still “experience what TikTok is at its  
13 core” by recording and watching videos on TikTok. For that reason, experts state the app is  
14 “designed to fuel [kids’] interest in the grown-up version.”<sup>307</sup>

15 394. Moreover, users under 13 can easily delete their age-restricted accounts and sign up  
16 for an over-13 account on the same mobile device—without any restriction or verification—using  
17 a fake birthdate.

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19 <sup>301</sup> *Browse as Guest*, TikTok Support, <https://support.tiktok.com/en/log-in-troubleshoot/log-in/browse-as-guest>.

20 <sup>302</sup> Jon Russell, *Musical.ly Defends its Handling of Young Users, As it Races Past 40M MAUs*,  
21 TechCrunch (Dec. 6, 2016), <https://techcrunch.com/2016/12/06/musically-techcrunch-disrupt-london/>.

22 <sup>303</sup> See Musical.ly Complaint, at p. 8, ¶¶ 26–27.

23 <sup>304</sup> Natasha Singer, *TikTok Broke Privacy Promises, Children’s Groups Say*, NY Times (May 14,  
24 2020), <https://www.nytimes.com/2020/05/14/technology/tiktok-kids-privacy.html#:~:text=TikTok%2C%20the%20popular%20app%20for%20making%20and%20sharing,20%20children%E2%80%99s%20and%20consumer%20groups%20said%20on%20Thursday>.

25 <sup>305</sup> *TikTok for Younger Users*, TikTok (Dec. 13, 2019), <https://newsroom.tiktok.com/en-us/tiktok-for-younger-users>.

26 <sup>306</sup> Dami Lee, *TikTok Stops Young Users from Uploading Videos after FTC Settlement*, Verge  
27 (Feb. 27, 2019), <https://www.theverge.com/2019/2/27/18243510/tiktok-age-young-user-videos-ftc-settlement-13-childrensprivacy-law>.

28 <sup>307</sup> Leonard Sax, *Is TikTok Dangerous for Teens?*, Inst. Fam. Stud. (Mar. 29, 2022),  
<https://ifstudies.org/blog/istiktok-dangerous-for-teens>.

1           395. The absence of effective age verification measures also means that adult users claim  
2 to be children—with obvious dangers to the children on ByteDance’s product.

3                           **b.       TikTok’s parental controls are defective.**

4           396. Following the FTC settlement, ByteDance created a “Family Pairing” feature on  
5 TikTok. The supposed purpose of that feature was to allow parents to link their accounts to their  
6 children’s accounts and enforce certain controls (such as screen time limits and restriction of  
7 “content that may not be appropriate for all audiences”).<sup>308</sup>

8           397. “Family Pairing” also is supposed to allow parents to prevent their children from  
9 direct messaging other TikTok users. But ByteDance has designed TikTok’s “Family Pairing”  
10 feature so that it is not mandatory for minor users. And to use it, a parent or guardian is forced to  
11 create their own TikTok account to pair it with their child’s account. Further, the “Family Pairing”  
12 feature is available only on the TikTok app. It provides no protection when a child accesses TikTok  
13 through a web browser. Because this feature requires parents to know the name of their child’s  
14 account to pair it, youth can easily evade the protections of the “Family Pairing” feature by creating  
15 anonymous accounts, again without parental approval or knowledge.

16           398. ByteDance further stymies parents’ ability to supervise minors’ use of TikTok by  
17 permitting minor users to block their parent’s profile, post ephemeral videos called “Stories” that  
18 disappear after 24 hours, and post those stories to “Friends Only.”

19           399. ByteDance could, but does not, adopt safety features that notify parents when minors  
20 are engaging excessively with the product and are using it during sleeping hours.

21           400. Until January 13, 2021, ByteDance interfered with parental supervision and  
22 endangered children by defaulting all accounts, including those registered to children as young as  
23 13, to “public.” That allowed strangers to contact minor users regardless of age or location.  
24 ByteDance also intentionally and actively promoted these types of connections by suggesting  
25 accounts to follow through the “Find Friends” or “People You May Know” features.

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27  
28 <sup>308</sup> *TikTok Introduces Family Pairing*, TikTok Newsroom (April 15, 2020)  
<https://newsroom.tiktok.com/en-us/tiktok-introduces-family-pairing>.

1           401. Today, for users 16 and over, ByteDance still sets the default privacy setting for all  
 2 registered accounts to “public,” meaning that anyone can view a user’s profile, on or off TikTok,  
 3 request the user as a friend, or engage with the user’s content.<sup>309</sup>

4                           c. **ByteDance intentionally designed TikTok’s defective features**  
 5 **and algorithms to maximize engagement using automatic**  
 6 **content, time-limited experiences, intermittent variable**  
 7 **rewards, reciprocity, and ephemeral content.**

8           402. Like each of the other Defendants, ByteDance has designed and coded TikTok with  
 9 features that foster addictive and compulsive use by youth, leading to a cascade of additional mental  
 10 and physical injuries.

11           403. One of TikTok’s defining features is its “For You” page (or “FYP”). According to  
 12 ByteDance, it is “central to the TikTok experience and where most of our users spend their time.”<sup>310</sup>

13           404. TikTok’s FYP uses ByteDance’s powerful machine-learning algorithms to select  
 14 content to feed users to maximize their engagement and thereby serve ByteDance’s interests—as  
 15 opposed to simply responding to searches by users. As one industry commentator explained,  
 16 TikTok uses “a machine-learning system that analyzes each video and tracks user behavior so that  
 17 it can serve up a continually refined, never-ending stream of TikToks optimized to hold [users’]  
 18 attention.”<sup>311</sup> As another commentator put it, “you don’t tell TikTok what you want to see. It tells  
 19 you.”<sup>312</sup>

24 <sup>309</sup> See, e.g., Lauren E. Sherman et al., *The Power of the Like in Adolescence: Effects of Peer*  
 25 *Influence on Neural and Behavioral Responses to Social Media*, 27(7) Psych. Sci. 1027–35 (July  
 26 2016), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5387999>.

27 <sup>310</sup> *How TikTok recommends videos #ForYou*, TikTok (June 18, 2020),  
 28 <https://newsroom.tiktok.com/en-us/howtiktok-recommends-videos-for-you>.

<sup>311</sup> Jia Tolentino, *How TikTok Holds Our Attention*, New Yorker (Sept. 30, 2019),  
<https://www.newyorker.com/magazine/2019/09/30/how-tiktok-holds-our-attention>.

<sup>312</sup> Drew Harwell, *How TikTok Ate the Internet*, Wash. Post. (Oct. 14, 2022),  
<https://www.theday.com/business/20221015/how-tiktok-ate-the-internet/>.

1           405. Zhu has remarked that, “[e]ven if you have tens of millions of users, you have to  
2 keep them always engaged.”<sup>313</sup> Thus, according to Zhu, TikTok’s algorithms are “focused primarily  
3 on increasing the engagement of existing users.”<sup>314</sup>

4           406. An internal document titled “TikTok Algo 101,” which TikTok has confirmed is  
5 authentic, “explains frankly that in the pursuit of the company’s ‘ultimate goal’ of adding daily  
6 active users, it has chosen to optimize for two closely related metrics in the stream of videos it  
7 serves: ‘retention’—that is, whether a user comes back—and ‘time spent.’”<sup>315</sup>

8           407. “This system means that watch time is key,” explained Guillaume Chaslot, the  
9 founder of Algo Transparency.<sup>316</sup> Chaslot noted that “rather than giving [people] what they really  
10 want,” TikTok’s “algorithm tries to get people addicted[.]”<sup>317</sup>

11           408. To fulfill this goal, the TikTok algorithm responds to a user’s time spent watching  
12 and engaging with a video by feeding them similar content.<sup>318</sup> As TikTok describes it, the  
13 algorithms populate each user’s FYP feed by “ranking videos based on a combination of factors”  
14 that include, among others, any interests expressed when a user registers a new account, videos a  
15 user likes, accounts they follow, hashtags, captions, sounds in a video they watch, certain device  
16 settings, such as their language preferences and where they are located, and finally the likelihood  
17 of the user’s interest.<sup>319</sup>

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19 <sup>313</sup> Biz Carson, *How a Failed Education Startup Turned Musical.ly, the Most Popular App You’ve*  
20 *Probably Never Heard Of*, Business Insider (May 28, 2016),  
<https://www.businessinsider.com/what-is-musically-2016-5> (emphasis added).

21 <sup>314</sup> Joseph Steinberg, *Meet Musical.ly, the Video Social Network Quickly Capturing the Tween*  
22 *and Teen Markets, Inc.* (June 2, 2016), [https://www.inc.com/joseph-steinberg/meet-musically-](https://www.inc.com/joseph-steinberg/meet-musically-the-video-social-network-quicklycapturing-the-tween-and-teen-m.html)  
23 [the-video-social-network-quicklycapturing-the-tween-and-teen-m.html](https://www.inc.com/joseph-steinberg/meet-musically-the-video-social-network-quicklycapturing-the-tween-and-teen-m.html).

24 <sup>315</sup> Ben Smith, *How TikTok Reads Your Mind*, N.Y. Times (Dec. 5, 2021),  
25 <https://www.nytimes.com/2021/12/05/business/media/tiktok-algorithm.html>.

26 <sup>316</sup> Ben Smith, *How TikTok Reads Your Mind*, N.Y. Times (Dec. 5, 2021),  
27 <https://www.nytimes.com/2021/12/05/business/media/tiktok-algorithm.html>.

28 <sup>317</sup> Ben Smith, *How TikTok Reads Your Mind*, N.Y. Times (Dec. 5, 2021),  
<https://www.nytimes.com/2021/12/05/business/media/tiktok-algorithm.html>.

<sup>318</sup> Kaitlyn Tiffany, *I’m Scared of the Person TikTok Thinks I Am*, The Atlantic (June 21, 2021),  
<https://www.theatlantic.com/technology/archive/2021/06/your-tiktok-feed-embarrassing/619257/>.

<sup>319</sup> *Investigation: How TikTok’s Algorithm Figures Out Your Deepest Desires*, Wall St. J. (Jul. 21, 2021),  
[https://www.wsj.com/video/series/inside-tiktoks-highly-secretive-algorithm/investigation-](https://www.wsj.com/video/series/inside-tiktoks-highly-secretive-algorithm/investigation-how-tiktok-algorithm-figures-out-your-deepest-desires/6C0C2040-FF25-4827-8528-2BD6612E3796)  
[how-tiktok-algorithm-figures-out-your-deepest-desires/6C0C2040-FF25-4827-8528-](https://www.wsj.com/video/series/inside-tiktoks-highly-secretive-algorithm/investigation-how-tiktok-algorithm-figures-out-your-deepest-desires/6C0C2040-FF25-4827-8528-2BD6612E3796)  
[2BD6612E3796](https://www.wsj.com/video/series/inside-tiktoks-highly-secretive-algorithm/investigation-how-tiktok-algorithm-figures-out-your-deepest-desires/6C0C2040-FF25-4827-8528-2BD6612E3796); see also *How TikTok recommends videos #ForYou | TikTok Newsroom*,  
<https://newsroom.tiktok.com/en-us/how-tiktok-recommends-videos-for-you>.

409. ByteDance has designed TikTok’s algorithm so that certain factors, such as time spent watching a video, are more important to the algorithm than others. For example, TikTok explains that, “whether a user finishes watching a longer video from beginning to end, would receive greater weight than . . . whether the video’s viewer and creator are both in the same country.”<sup>320</sup>

410. TikTok’s algorithms are designed to begin working the minute a user opens the app. The FYP shows the user a single, full-screen stream of videos, then records how the user reacts. “A second of viewing or hesitation indicates interest; a swipe suggests a desire for something else.”<sup>321</sup> With each data point collected, TikTok’s algorithm winnows a mass of content to a single feed, continually refined to keep users engaging often and at length.

411. This algorithmic encouragement of continuous scrolling and interaction makes it hard for users to disengage from the app. A recent ByteDance-funded study, which imaged the brains of TikTok and other social media product users, found that those using TikTok engaged with the product about 10 times a minute, twice as often as with peer apps.<sup>322</sup>

412. ByteDance leverages users’ inability to disengage as a benefit to attract advertisers, rather than taking steps to address the addictive nature of its product. A recent TikTok marketing document observed that “the TikTok audience is fully leaned in.”<sup>323</sup> Marketing research commissioned by TikTok found that compared to other social media sites, TikTok users evidenced a higher frequency of rate per minute. TikTok boasted, “[o]ur algorithm and shorter video formats

<sup>320</sup> *Investigation: How TikTok’s Algorithm Figures Out Your Deepest Desires*, Wall St. J. (Jul. 21, 2021), <https://www.wsj.com/video/series/inside-tiktoks-highly-secretive-algorithm/investigation-how-tiktok-algorithm-figures-out-your-deepest-desires/6C0C2040-FF25-4827-8528-2BD6612E3796>; see also *How TikTok recommends videos #ForYou | TikTok Newsroom*, <https://newsroom.tiktok.com/en-us/how-tiktok-recommends-videos-for-you>.

<sup>321</sup> *Investigation: How TikTok’s Algorithm Figures Out Your Deepest Desires*, Wall St. J. (Jul. 21, 2021), <https://www.wsj.com/video/series/inside-tiktoks-highly-secretive-algorithm/investigation-how-tiktok-algorithm-figures-out-your-deepest-desires/6C0C2040-FF25-4827-8528-2BD6612E3796>; see also *How TikTok recommends videos #ForYou | TikTok Newsroom*, <https://newsroom.tiktok.com/en-us/how-tiktok-recommends-videos-for-you>.

<sup>322</sup> *TikTok Ads Break Through Better Than Tv and Drive Greater Audience Engagement*, TikTok, <https://www.tiktok.com/business/library/TikTokDrivesGreaterAudienceEngagement.pdf>.

<sup>323</sup> *TikTok Ads Break Through Better Than Tv and Drive Greater Audience Engagement*, TikTok, <https://www.tiktok.com/business/library/TikTokDrivesGreaterAudienceEngagement.pdf>.

1 create continuous cycles of engagement, making TikTok the leading platform for Information  
2 Density.”<sup>324</sup>

3 413. ByteDance also creates images and GIFs for users to incorporate into TikTok videos  
4 to keep users returning to the product. And ByteDance has acquired publishing rights to thousands  
5 of hours of music and video, which it provides its users to attach to the videos and pictures they  
6 post on TikTok.

7 414. TikTok’s powerful machine-learning algorithms dictate the content of each user’s  
8 FYP. An estimated 90-95% of the content viewed on TikTok comes from its algorithms (as opposed  
9 to user selection), the highest among Defendants’ products.<sup>325</sup>

10 415. The algorithm encourages use of the product, regardless of whether that use is  
11 enjoyable or healthy. From TikTok’s perspective, it doesn’t matter whether you’re engaging with  
12 a video because you’re horrified or angry or upset—the engagement itself is the end goal.

13 416. As the algorithm continues to refine what users see, they are “more likely to  
14 encounter harmful content.”<sup>326</sup> Indeed, TikTok’s quest to monopolize user attention often forces  
15 users down “rabbit holes” of harmful content. Users end up in these rabbit holes, and become  
16 trapped in them, because TikTok has optimized its algorithm’s design for retention and time spent  
17 on the app.<sup>327</sup> TikTok wants to keep users coming back as often as possible for as long as possible.

18 417. Once users are in a rabbit hole, it is extremely difficult to climb out. One user was  
19 shown a few anti-vaccination conspiracy theory videos on his FYP and commented on them in an  
20 attempt to refute the videos’ claims. His feed was quickly overtaken with similar videos, and it took  
21 him months of intentional interaction with the app to purge this content from his FYP.<sup>328</sup> In general,

22 <sup>324</sup> *TikTok Ads Break Through Better Than Tv and Drive Greater Audience Engagement, TikTok*,  
23 <https://www.tiktok.com/business/library/TikTokDrivesGreaterAudienceEngagement.pdf>.

24 <sup>325</sup> *Investigation: How TikTok’s Algorithm Figures Out Your Deepest Desires*, Wall St. J. (Jul. 21,  
25 2021), <https://www.wsj.com/video/series/inside-tiktoks-highly-secretive-algorithm/investigation-how-tiktok-algorithm-figures-out-your-deepest-desires/6C0C2040-FF25-4827-8528-2BD6612E3796>.

26 <sup>326</sup> *Inside TikTok’s Algorithm: A WSJ Video Investigation*, Wall St. J. (July 21, 2021),  
27 <https://www.wsj.com/articles/tiktok-algorithm-video-investigation-11626877477>.

28 <sup>327</sup> Ben Smith, *How TikTok Reads Your Mind*, N.Y. Times (Dec. 5, 2021),  
<https://www.nytimes.com/2021/12/05/business/media/tiktok-algorithm.html>.

<sup>328</sup> Kaitlyn Tiffany, *I’m Scared of the Person TikTok Thinks I Am*, The Atlantic (June 21, 2021),  
<https://www.theatlantic.com/technology/archive/2021/06/your-tiktok-feed-embarrassing/619257/>.



1 escaping a rabbit hole requires a user to repeatedly and actively strategize ways to counter the  
2 algorithm, pitting individual users' David against TikTok's machine-learning Goliath.

3 418. The Wall Street Journal documented the pernicious operation of ByteDance's  
4 algorithms, as shown by a recent experiment. The experimenters used bots, each programmed with  
5 various interests such as sports, forestry, dance, astrology, and animals. They did not disclose these  
6 interests upon registration with TikTok. Instead, TikTok's algorithm quickly learned the assigned  
7 interests from the bots' behavior—that is, “by rewatching or pausing on videos” related to the bot's  
8 programmed interest.<sup>329</sup>

9 419. One bot watched 224 videos in 26 minutes, lingering over videos with hashtags for  
10 “depression” or “sad.” The algorithm quickly refined its output. Afterward, 93% of the videos  
11 TikTok showed that bot were about depression or sadness. One post implored the bot to: “Just go.  
12 Leave. Stop trying. Stop pretending. You know it and so do they. Do Everyone a favor and  
13 leave.”<sup>330</sup>

14 420. ByteDance's choices about how to design and structure its app—including choosing  
15 not to implement effective age gating and parental controls, in addition to choosing to design  
16 algorithms to maximize engagement through pushing extreme and outrageous content—go far  
17 beyond benignly organizing the content of others. Instead, they create an environment and  
18 experience suited to ByteDance's goal of maximizing ad revenues—an environment and  
19 experience that is unreasonably dangerous to the children and teens ByteDance targets.

20 421. In a follow-up experiment by the Wall Street Journal, bots were registered as users  
21 between 13 and 15 years-old. One of those bots, programmed to pause on videos referencing drugs,  
22 lingered briefly on “a video of a young woman walking through the woods with a caption” referring  
23 to “stoner girls.” The next day, the algorithm showed the bot a video about a “marijuana-themed  
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27 <sup>329</sup> *Inside TikTok's Algorithm: A WSJ Video Investigation*, Wall St. J. (July 21, 2021),  
<https://www.wsj.com/articles/tiktok-algorithm-video-investigation-11626877477>.

28 <sup>330</sup> *Inside TikTok's Algorithm: A WSJ Video Investigation*, Wall St. J. (July 21, 2021),  
<https://www.wsj.com/articles/tiktok-algorithm-video-investigation-11626877477>.

1 cake.” Then, the “majority of the next thousand videos” that TikTok’s algorithm produced “tout[ed]  
2 drugs and drug use,” including marijuana, psychedelics, and prescription drugs.<sup>331</sup>

3 422. The algorithm immersed another bot—registered as a 13-year-old boy—into a rabbit  
4 hole of videos related to bondage and sex, including videos explaining, among other things, “how  
5 to tie knots for sex, recover from violent sex acts and discussing fantasies about rape.”<sup>332</sup> The bot  
6 simply searched for the term “onlyfans”—a site known for hosting adult entertainment—and  
7 watched a handful of videos in the results before returning to the FYP.<sup>333</sup> The algorithm  
8 subsequently bombarded the bot with videos about sex and, as the bot lingered on those videos, the  
9 bot’s feed became almost entirely dominated by sex-related videos. At one point, “more than 90  
10 percent of [the] account’s video feed was about bondage and sex.”<sup>334</sup>

11 423. The Wall Street Journal concluded “that through its powerful algorithms, TikTok  
12 can quickly drive minors—among the biggest users of the app—into endless spools of content about  
13 sex and drugs.”<sup>335</sup> In another follow-up experiment, the Wall Street Journal found that once  
14 TikTok’s algorithm determined that the bots would rewatch videos related to weight loss, it  
15 “speedily began serving more, until weight-loss and fitness content made up more than half their  
16 feeds—even if the bot never sought it out.”<sup>336</sup>

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22 <sup>331</sup> Rob Barry et al., *How TikTok Serves Up Sex and Drug Videos to Minors*, Wall St. J. (Sept. 8,  
2021), <https://www.wsj.com/articles/tiktok-algorithm-sex-drugs-minors-11631052944>.

23 <sup>332</sup> Rob Barry et al., *How TikTok Serves Up Sex and Drug Videos to Minors*, Wall St. J. (Sept. 8,  
2021), <https://www.wsj.com/articles/tiktok-algorithm-sex-drugs-minors-11631052944>.

24 <sup>333</sup> Rob Barry et al., *How TikTok Serves Up Sex and Drug Videos to Minors*, Wall St. J. (Sept. 8,  
2021), <https://www.wsj.com/articles/tiktok-algorithm-sex-drugs-minors-11631052944>.

25 <sup>334</sup> Rob Barry et al., *How TikTok Serves Up Sex and Drug Videos to Minors*, Wall St. J. (Sept. 8,  
2021), <https://www.wsj.com/articles/tiktok-algorithm-sex-drugs-minors-11631052944>.

26 <sup>335</sup> Rob Barry et al., *How TikTok Serves Up Sex and Drug Videos to Minors*, Wall St. J. (Sept. 8,  
2021), <https://www.wsj.com/articles/tiktok-algorithm-sex-drugs-minors-11631052944>.

27 <sup>336</sup> Tawnell D. Hobbs, *‘The Corpse Bride Diet’: How TikTok Inundates Teens With Eating-  
28 Disorder Videos*, Wall St. J. (Dec. 17, 2021), <https://www.wsj.com/articles/how-tiktok-inundates-teens-with-eating-disorder-videos-11639754848>.

1           424. Indeed, TikTok’s algorithm recommended over 32,000 weight-loss videos over a  
2 two-month period, “many promoting fasting, offering tips for quickly burning belly fat and pushing  
3 weight-loss detox programs and participation in extreme weight-loss competitions.”<sup>337</sup>

4           425. Alyssa Moukheiber, a treatment center dietitian, explained that TikTok’s algorithm  
5 can push children into unhealthy behaviors or trigger a relapse of disordered eating.<sup>338</sup> Indeed,  
6 several teenage girls interviewed by the Wall Street Journal reported developing eating disorders  
7 or relapsing after being influenced by extreme diet videos TikTok promoted to them.<sup>339</sup>

8           426. Their experiences are not unique. Katie Bell, a co-founder of the Healthy Teen  
9 Project, explained that “the majority of her 17 teenage residential patients told her TikTok played  
10 a role in their eating disorders.”<sup>340</sup>

11           427. Others, like Stephanie Zerwas, an Associate Professor of Psychiatry at the  
12 University of North Carolina at Chapel Hill, could not even recount how many of her young patients  
13 told her that “I’ve started falling down this rabbit hole, or I got really into this or that influencer on  
14 TikTok, and then it started to feel like eating-disorder behavior was normal, that everybody was  
15 doing that.”<sup>341</sup>

16           428. In December 2022, the Center for Countering Digital Hate (“CCDH”) conducted a  
17 similar study, creating TikTok accounts with a registered age of 13 in the United States, United  
18 Kingdom, Canada, and Australia.<sup>342</sup> For the first 30 minutes on the app, the accounts paused briefly

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20 <sup>337</sup> Tawnell D. Hobbs, *‘The Corpse Bride Diet’: How TikTok Inundates Teens With Eating-  
Disorder Videos*, Wall St. J. (Dec. 17, 2021), <https://www.wsj.com/articles/how-tiktok-inundates-teens-with-eating-disorder-videos-11639754848>.

21 <sup>338</sup> Tawnell D. Hobbs, *‘The Corpse Bride Diet’: How TikTok Inundates Teens With Eating-  
Disorder Videos*, Wall St. J. (Dec. 17, 2021), <https://www.wsj.com/articles/how-tiktok-inundates-teens-with-eating-disorder-videos-11639754848>.

22 <sup>339</sup> Tawnell D. Hobbs, *‘The Corpse Bride Diet’: How TikTok Inundates Teens With Eating-  
Disorder Videos*, Wall St. J. (Dec. 17, 2021), <https://www.wsj.com/articles/how-tiktok-inundates-teens-with-eating-disorder-videos-11639754848>.

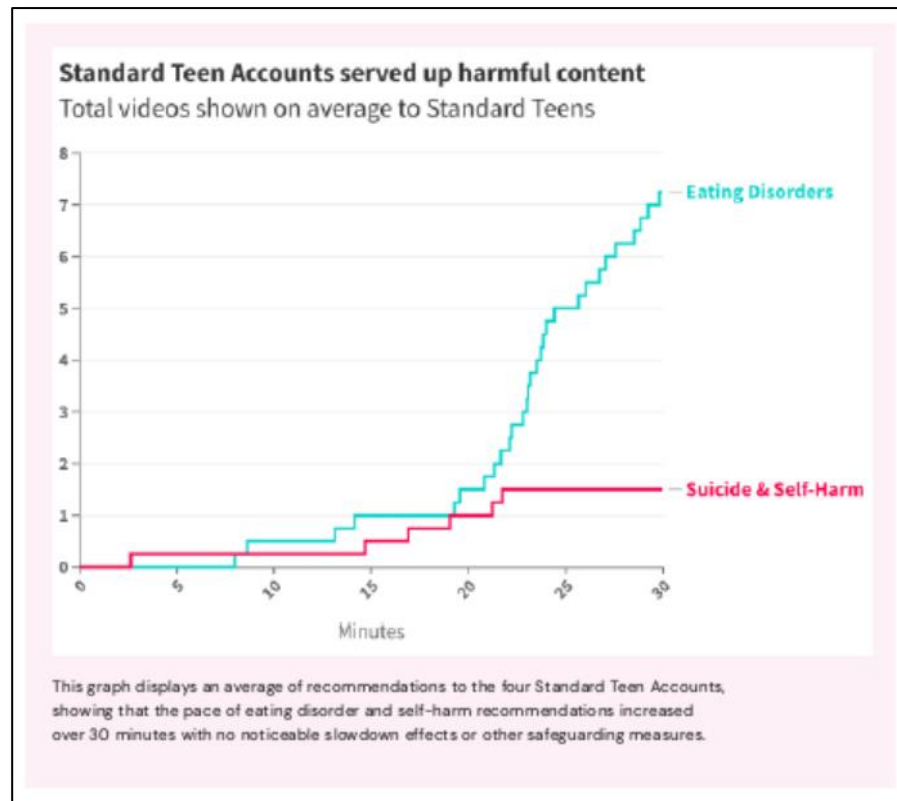
23 <sup>340</sup> Tawnell D. Hobbs, *‘The Corpse Bride Diet’: How TikTok Inundates Teens With Eating-  
Disorder Videos*, Wall St. J. (Dec. 17, 2021), <https://www.wsj.com/articles/how-tiktok-inundates-teens-with-eating-disorder-videos-11639754848>.

24 <sup>341</sup> Tawnell D. Hobbs, *‘The Corpse Bride Diet’: How TikTok Inundates Teens With Eating-  
Disorder Videos*, Wall St. J. (Dec. 17, 2021), <https://www.wsj.com/articles/how-tiktok-inundates-teens-with-eating-disorder-videos-11639754848>.

25 <sup>342</sup> *Deadly by Design*, Center for Countering Digital Hate (Dec. 2022),  
26 [https://counterhate.com/wp-content/uploads/2022/12/CCDH-Deadly-by-Design\\_120922.pdf](https://counterhate.com/wp-content/uploads/2022/12/CCDH-Deadly-by-Design_120922.pdf).  
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on videos about body image and mental health and liked them. “Where researchers identified a recommended video matching one of the below categories, they viewed the video for 10 seconds and liked it. For all other videos, researchers would immediately scroll the For You feed to view the next video recommended by TikTok.”<sup>343</sup> TikTok’s algorithm seized on this information and within minutes began recommending content about eating disorders and self-harm.

429. The CCDH report further illustrated TikTok’s algorithms at work, noting that, for an account that liked content about body image and mental health, the algorithm recommended similar content every 39 seconds. As the 30 minutes went on, TikTok recommended more videos related to eating disorders, suicide, and self-harm, as the graph below shows.



430. TikTok’s rabbit holes are particularly problematic for young people, who lack the necessary impulse control to stop watching. The more the user engages by viewing or hesitating on a particular piece of content, the more TikTok’s algorithms learn about the user. ByteDance uses this feature to exploit the vulnerabilities of children and teenagers, and addict them to its product.

<sup>343</sup> Tawnell D. Hobbs, *‘The Corpse Bride Diet’: How TikTok Inundates Teens With Eating-Disorder Videos*, Wall St. J. (Dec. 17, 2021), <https://www.wsj.com/articles/how-tiktok-inundates-teens-with-eating-disorder-videos-11639754848>.

1           431. Indeed, ByteDance admits that its recommendation algorithm creates a “risk of  
2 presenting an increasingly homogeneous stream of videos.”<sup>344</sup> As the above-referenced studies and  
3 experiments demonstrate, that homogeneous stream often includes harmful content, including posts  
4 about depression, self-harm, drugs, and extreme diets.

5           432. ByteDance uses a series of interrelated design features that exploit known mental  
6 processes to induce TikTok’s users to use the product more frequently, for more extended periods,  
7 and with more intensity (i.e., providing more comments and likes). ByteDance knows or should  
8 have known that children, whose brains are still developing, are particularly susceptible to these  
9 addictive features.

10           433. TikTok is defective in part because ByteDance designed the app so users cannot  
11 disable the auto-play function on the FYP.<sup>345</sup> As noted above, when a user opens the TikTok app  
12 or visits the TikTok website, the product immediately begins playing a video on the user’s FYP.  
13 The user may request more videos with a simple upward swipe, and the product will deliver a  
14 seemingly endless content stream. If a user does not proceed from a video, it continues to play on  
15 an endless loop. The ability to scroll continuously induces a “flow-state” and distorts users’ sense  
16 of time.

17           434. The TikTok app interface is designed with only a limited number of buttons and  
18 sections of the app for users to navigate, such that the design does not impede “flow.”

19           435. The FYP also leverages principles of IVR to encourage compulsive usage, in the  
20 same fashion as Instagram Reels. A user swipes to receive the next video, and each swipe offers  
21 the prospect (but not the certainty) of dopamine-releasing stimuli.

22           436. The cumulative effect of these features is addictive, compulsive engagement. As  
23 researchers at the Brown University School of Public Health explained, “the infinite scroll and  
24 variable reward pattern of TikTok likely increase the addictive quality of the app as they may induce  
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27 <sup>344</sup> *How TikTok recommends videos #ForYou*, TikTok (June 18, 2020),  
<https://newsroom.tiktok.com/en-us/howtiktok-recommends-videos-for-you>.

28 <sup>345</sup> *2 Best Ways You Can Turn off TikTok Autoplay*, Globe Calls (Dec. 16, 2022),  
<https://globecalls.com/2-best-ways-you-can-turn-off-tiktok-autoplay/>.

1 a flow-like state for users that is characterized by a high degree of focus and productivity at the task  
2 at hand.”<sup>346</sup>

3 437. Dr. Julie Albright, a Professor at the University of Southern California, similarly  
4 explained that TikTok is so popular because users will “just be in this pleasurable dopamine state,  
5 carried away. It’s almost hypnotic, you’ll keep watching and watching.” Users “keep scrolling,”  
6 according to Dr. Albright, “because sometimes you see something you like, and sometimes you  
7 don’t. And that differentiation—very similar to a slot machine in Vegas—is key.”<sup>347</sup>

8 438. Aza Raskin, the engineer who designed infinite scroll, described the feature as being  
9 “as if [social media companies are] taking behavioral cocaine and just sprinkling it all over your  
10 interface, and that’s the thing that keeps you coming back and back and back.” Because the infinite  
11 scroll does not “give your brain time to catch up with your impulses . . . you just keep scrolling.”<sup>348</sup>

12 439. To reinforce this addictive experience, ByteDance intentionally omits the concept  
13 of time from their product, stripping information such as when a user uploaded a video from its  
14 endless stream of content. In the FYP, there is no way to discern how long ago the video was posted,  
15 or when the user who posted the video joined TikTok.

16 440. On at least some phones, TikTok is designed to cover the clock displayed at the top  
17 of user’s iPhones, preventing them from keeping track of the time spent on TikTok.<sup>349</sup>

18 441. ByteDance has designed the app so that users can see, however, how many times a  
19 video was liked, commented on, or shared. So, the only thing users can quantify within the app is  
20 the approval or disapproval of others.

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23 <sup>346</sup> Sophia Petrillo, *What Makes TikTok So Addictive? An Analysis of the Mechanisms Underlying*  
24 *the World’s Latest Social Media Craze*, Brown Undergraduate J. of Pub. Health (Dec. 13, 2021),  
<https://sites.brown.edu/publichealthjournal/2021/12/13/tiktok/>.

25 <sup>347</sup> John Koetsier, *Digital Crack Cocaine: The Science Behind TikTok’s Success*, Forbes (Jan. 18,  
2020), <https://www.forbes.com/sites/johnkoetsier/2020/01/18/digital-crack-cocaine-the-science-behind-tiktoks-success/?sh=765d1b4178be>.

26 <sup>348</sup> John Koetsier, *Digital Crack Cocaine: The Science Behind TikTok’s Success*, Forbes (Jan. 18,  
27 2020), <https://www.forbes.com/sites/johnkoetsier/2020/01/18/digital-crack-cocaine-the-science-behind-tiktoks-success/?sh=765d1b4178be>.

28 <sup>349</sup> Louise Matsakis, *On TikTok, There is No Time*, Wired (October 3, 2019),  
<https://www.wired.com/story/tiktok-time/>.



1           442. In June 2022, after receiving public criticism regarding its product's effects on  
2 people's mental health, ByteDance introduced various tools to purportedly encourage users to take  
3 a break from infinite scrolling, such as a "Take a Break" reminder and time-limit caps. ByteDance  
4 could but does not activate these tools by default. Even for minors, once they have exceeded 100  
5 minutes of usage a day, TikTok only "reminds" them that these "Take a Break" tools exist upon  
6 opening the app, but does not automatically activate them by default.

7           443. In addition to the defective infinite scroll, ByteDance has designed TikTok so it has  
8 other design features that exploit social psychological impulses to induce children to use TikTok  
9 daily and for extended periods of time, adding to the product's addictive nature.

10          444. Several TikTok features actively encourage users to generate ephemeral photos and  
11 videos. This defect promotes compulsive use, because users risk missing the content posted by their  
12 friends and others if they do not check TikTok at least daily.

13          445. A TikTok user can, for example, post expiring "Stories," short videos that disappear  
14 after 24 hours. These videos do not otherwise appear in a user's feed. TikTok's live stream feature  
15 is similar.<sup>350</sup>

16          446. A relatively new feature, "TikTok Now," pushes daily notifications to users to share  
17 "authentic, real-time images or 10-second videos at the same time as your friends."<sup>351</sup> ByteDance  
18 designed this feature so that once a user gets the notification, the user has three minutes to post an  
19 image or video. That user cannot view friends' "TikTok Now" posts without sharing one of their  
20 own, and posts submitted outside of the three-minute window are marked as "late." TikTok  
21 preserves a user's history in a calendar view, adding to the pressure to visit the app daily and when  
22 notified by TikTok to do so. ByteDance designed these defective features to increase  
23 responsiveness to notifications and keep young users locked into the product, as they do not want  
24 to miss out on this perceived social activity.

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27 <sup>350</sup> Hilary Anderson, *Social media apps are 'deliberately addictive to users*, BBC (July 4, 2018),  
<https://www.bbc.com/news/technology-44640959>.

28 <sup>351</sup> *TikTok Now*, TikTok, <https://www.tiktok.com/creators/creator-portal/product-feature-updates/tiktok-now>.

1           447. Like “Snap Streaks,” “TikTok Now” does not enhance the communication function  
 2 of the product, but simply exploits young users’ susceptibility to persuasive design, teenage social  
 3 anxiety, and FOMO. ByteDance’s insidious design of “TikTok Now” also employs point scoring  
 4 and competition with others to drive frequent and continuous engagement by children, who  
 5 otherwise risk checking in late and alienating other peers participating in the exchange.

6           448. Like the other Defendants’ apps, ByteDance designed TikTok to leverage the  
 7 principle of IVR by encouraging users to like, share, or reshare videos that others have created or  
 8 posted. Receiving a “Like” or “Reshare” indicates that others approve of that user’s content and  
 9 satisfies their natural, developmentally predictable desire for acceptance. As discussed above,  
 10 “Likes” activate the reward region of the brain and release dopamine to create a positive feedback  
 11 loop.<sup>352</sup> Users return to TikTok again and again, hoping for yet another pleasurable experience.<sup>353</sup>

12           449. ByteDance also designed TikTok to use reciprocity to manipulate users into using  
 13 the app. One example is the “Duet” feature, which allows users to post a video side-by-side with a  
 14 video from another TikTok user. Users utilize “Duet” to react to the videos of TikTok content  
 15 creators. ByteDance intends the response to engender a reciprocal response from the creator of the  
 16 original video, inducing them to return to the app.

17           450. Another “core feature” of TikTok that ByteDance has pursued are “challenges,”  
 18 which are campaigns that compel users to create and post in TikTok certain types of videos, such  
 19 as performing a dance routine or a dangerous prank. By fostering competition and the social  
 20 rewards of posting a challenge video, ByteDance incentivizes users to engage with the product  
 21 continuously.

22           451. Harmful and dangerous interactions are a foreseeable consequence of TikTok’s  
 23 engagement-maximization design. For example, numerous minor users have injured themselves or

24  
 25 <sup>352</sup> Rasan Burhan & Jalal Moradzadeh, *Neurotransmitter Dopamine (DA) and its Role in the*  
 26 *Development of Social Media Addiction*, 11(7) J. Neurology & Neurophysiology 507 (2020),  
<https://www.iomcworld.org/openaccess/neurotransmitter-dopamine-da-and-its-role-in-the-development-of-social-media-addiction.pdf>.

27 <sup>353</sup> Rasan Burhan & Jalal Moradzadeh, *Neurotransmitter Dopamine (DA) and its Role in the*  
 28 *Development of Social Media Addiction*, 11(7) J. Neurology & Neurophysiology 507 (2020),  
<https://www.iomcworld.org/openaccess/neurotransmitter-dopamine-da-and-its-role-in-the-development-of-social-media-addiction.pdf>.

1 others participating in viral pranks to obtain rewards and increase the number of likes, views, and  
2 followers.

3 452. One such viral prank, “the Benadryl challenge,” features a user filming themselves  
4 taking large quantities of Benadryl to cause hallucinations or induce an altered mental state. Other  
5 similar viral challenges include the “NyQuil Challenge,” in which young people are encouraged to  
6 eat chicken cooked in NyQuil; the “Milk Crate Challenge,” where adolescents climb atop a stack  
7 of milk crates and jump off; the “Penny Challenge,” where young users are encouraged to plug a  
8 charger halfway into an outlet while holding a penny against the exposed prongs; and the “Blackout  
9 Challenge” where youth are encouraged to make themselves faint by holding their breath and  
10 constricting their chest muscles or restricting airflow with a ligature around their neck.

11 453. TikTok challenges have led to serious health complications, seizures, and death,  
12 with at least 12 children in the United States dying from the TikTok Blackout Challenge alone.<sup>354</sup>

13 454. Nevertheless, ByteDance encourages businesses to create challenges as a form of  
14 marketing, explaining that challenges are “geared towards building awareness and engagement,”  
15 and “research shows that they can deliver strong results” and increased return on ad spending “at  
16 every stage of the funnel.”<sup>355</sup> While ByteDance extolls the revenue potential from challenges,  
17 young users continue to face new and serious harms as the challenges’ stakes grow even more  
18 extreme and dangerous.

19 **d. ByteDance’s defective features include impediments to**  
20 **discontinuing use.**

21 455. Even if a user escapes the addictiveness of TikTok’s design and decides to delete  
22 their account, ByteDance makes doing so a lengthy and complex undertaking. The deletion process  
23  
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25 <sup>354</sup> Quinn Nguyen, *Don’t let your kids try these 9 dangerous TikTok trends!*  
26 <https://cyberpurify.com/knowledge/9-dangerous-tiktok-trends/>; Olivia Carville, *TikTok’s Viral Challenges Keep Luring Young Kids to Their Deaths*, Bloomberg (Nov. 30, 2022)  
27 <https://www.bloomberg.com/news/features/2022-11-30/is-tiktok-responsible-if-kids-die-doing-dangerous-viral-challenges>.

28 <sup>355</sup> *Branded Hashtag Challenge: Harness the Power of Participation*, TikTok for Business (Mar. 16, 2022), <https://www.tiktok.com/business/en-US/blog/branded-hashtag-challenge-harness-the-power-of-participation>.

1 is defectively designed to encourage users to retain their accounts, even if their stated reason for  
2 deletion is that the product is endangering their safety or health.

3 456. When a user selects the “Deactivate or delete account” in the “Account” section of  
4 the TikTok app, the user is presented an option: “Delete or deactivate?” Deactivating an account  
5 will preserve the user’s data, but hide it from the product; deleting, on the other hand, will  
6 permanently delete all data associated with the account.

7 457. However, ByteDance designed TikTok so that deletion is not immediate. The data  
8 and account are preserved for 30 days, during which time the user can reactivate their account.

9 458. If a user selects the “Delete account permanently” option, the user is asked “Why  
10 are you leaving TikTok?” The user must select from the following list: (1) I’m leaving temporarily;  
11 (2) I’m on TikTok too much; (3) Safety or privacy concerns; (4) Too many irrelevant ads; (5)  
12 Trouble getting started; (6) I have multiple accounts; or (7) Another reason.

13 459. If a user selects “I’m on TikTok too much,” ByteDance makes a last-ditch effort to  
14 retain the user by reminding the user that a limit can be set on the user’s watch time on the product.  
15 If a user selects “Safety or privacy concerns,” the user is provided a list of resources to “secure”  
16 the account. If the user selects “Another reason,” a written explanation must be provided. The only  
17 option that does not provide or require further information is “I have multiple accounts.” ByteDance  
18 isn’t worried about users deleting merely one account if they already have multiple others.

19 460. Once a user selects a reason for deletion, the next screen prompts the user to  
20 download their TikTok data.

21 461. Before the user continues the deletion, the product requires the user to check a box  
22 at the bottom of the screen that says, “[b]y continuing, you reviewed your data request and wish to  
23 continue deleting your account.” This contrasts with the process of a user “agreeing” to the Terms  
24 of Service and Privacy Policy during the registration process, which does not require a separate  
25 confirmation.

26 462. Once the user confirms a desire to continue with the deletion process, the product  
27 takes the user to yet another screen, which yet again asks whether the user wants to “delete this  
28 account?” The text also explains that the account will be deactivated for 30 days, during which the

1 user may reactivate the account, and after 30 days, the account and data associated with it will be  
 2 permanently deleted. It goes on to warn that if a user deletes the account, the user will no longer be  
 3 able to do many things in the app.

4 463. Once a user again confirms that they want to delete their account, TikTok requires  
 5 validation with a 6-digit code sent to the telephone number or email address associated with the  
 6 account. Only after the user receives and enters the code may they finally “delete” their account  
 7 (after waiting 30 days).

8 464. ByteDance’s account deletion process is inadequate for children attempting to  
 9 escape its addictive and harmful product. Requiring a child to go through multiple steps, and  
 10 offering alternatives, as well as a list of things they are giving up, is designed to convince them to  
 11 change their mind. Moreover, requiring the user to maintain a deactivated account for 30 days,  
 12 rather than deleting it on demand, increases the chance that an addicted user will relapse and return  
 13 to the app.

14 465. ByteDance’s intentionally cumbersome and defective deletion process prioritizes  
 15 the retention of young users, and ad revenue that they generate, over their well-being.

16 e. **ByteDance’s defective features inflict impossible image**  
 17 **standards and encourage negative appearance comparison.**

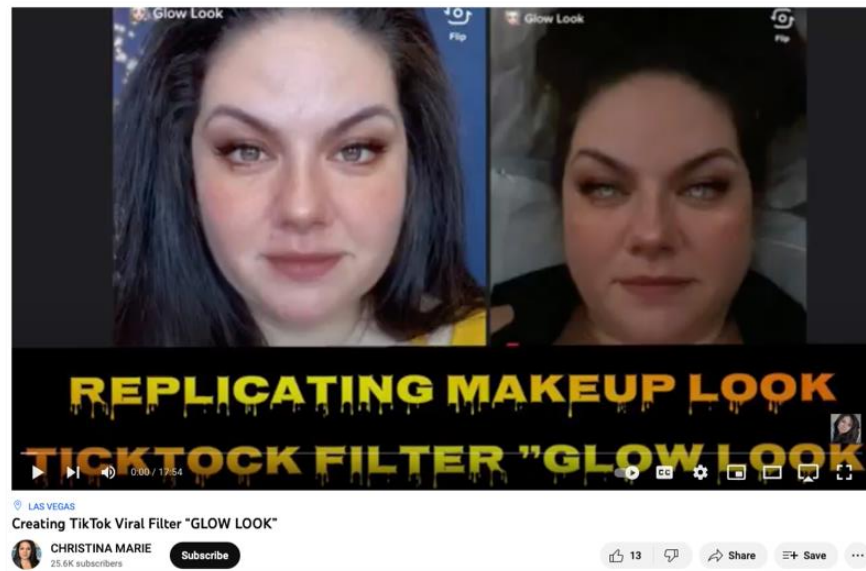
18 466. ByteDance designed TikTok with image-altering filters that harm users. These  
 19 filters allow children to artificially change their appearance, for example by lightening their skin  
 20 and eyes, giving them glowing tan skin, or giving them larger lips or fluttering eyelashes.

21 467. Young people often then compare the filtered images to their real-life appearance,  
 22 developing a negative self-image based on unrealistic, artificial images.<sup>356</sup> Many young girls use  
 23 image-altering filters every day, harming their mental health. And those filters subconsciously  
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27 <sup>356</sup> Anna Haines, *From ‘Instagram Face’ To ‘Snapchat Dysmorphia’: How Beauty Filters Are*  
 28 *Changing The Way We See Ourselves*, Forbes (Apr. 27, 2021 at 1:19 PM EDT),  
<https://www.forbes.com/sites/annahaines/2021/04/27/from-instagram-face-to-snapchat-dysmorphia-how-beauty-filters-are-changing-the-way-we-see-ourselves/?sh=3c32eb144eff>.

1 make girls feel imperfect and ugly, “reduc[ing] their self-compassion and tolerance for their own  
2 physical flaws.”<sup>357</sup>

3 468. So compelling is the desire to resemble more closely the filtered ideal that there are  
4 online tutorials explaining how to recreate certain filters using makeup.



15 469. Children’s idealization of their filtered image is externally reinforced when the  
16 filtered images receive more likes, comments, and other interaction. Young people also compare  
17 these interaction “scores” to those of friends and celebrities who use filters, reinforcing the idea  
18 that beauty depends on matching a digital ideal.

19 470. But filters, retouch, and other editing tools available on TikTok often alter specific  
20 facial features, such as the shape of a person’s eyes and lips, in ways that would require medical  
21 intervention to alter in real life. Children, particularly girls, are thus striving for a standard of beauty  
22 that is functionally impossible to achieve, with every TikTok filter creating a test that they are  
23 doomed to fail.  
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27 <sup>357</sup> Anna Haines, *From ‘Instagram Face’ To ‘Snapchat Dysmorphia’: How Beauty Filters Are*  
28 *Changing The Way We See Ourselves*, Forbes (Apr. 27, 2021 at 1:19 PM EDT),  
<https://www.forbes.com/sites/annahaines/2021/04/27/from-instagram-face-to-snapchat-dysmorphia-how-beauty-filters-are-changing-the-way-we-see-ourselves/?sh=3c32eb144eff>.



1                   **4. ByteDance facilitates the spread of CSAM and child exploitation.**

2           471. ByteDance has designed various TikTok features that promote and dramatically  
3 exacerbate sexual exploitation, the spread of CSAM, sextortion, and other socially maladaptive  
4 behavior that harms children.

5           472. TikTok’s design features enable the spread of this illegal material, and it receives  
6 value in the form of increased user activity for disseminating these materials on the product.

7           473. TikTok allows users to add a location to publicly shared videos of themselves.<sup>358</sup>  
8 TikTok encourages the use of location services, “prompt[ing] [users] to turn on Location Services  
9 when [users] browse the For You feed.”

10          474. By providing access to a child user’s present physical location, ByteDance  
11 encourages predators to locate nearby children for purposes of sexual exploitation, sextortion, and  
12 CSAM.

13          475. ByteDance designed TikTok with a “Your Private Videos,” feature, where users can  
14 create and store private videos that are only visible to the user, better known as “Post-in-Private”  
15 accounts, where adult predators store, create, post, and share CSAM. Within days of following a  
16 small number of “Post-in-Private” accounts, TikTok’s algorithm begins recommending dozens of  
17 other “Post-in-Private” accounts to follow, making it easy for predators to view and share even  
18 more CSAM.<sup>359</sup>

19          476. These accounts are nominally private, but users can share their usernames and  
20 passwords with other users to access these private videos.<sup>360</sup> While ByteDance’s user policy forbids  
21 sharing passwords with other users, TikTok’s design means that it is nonetheless very easy to do.<sup>361</sup>

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<sup>358</sup> *Location Information on TikTok*, TikTok, <https://support.tiktok.com/en/account-and-privacy/account-privacy-settings/location-services-on-tiktok>.

25                   <sup>359</sup> *Location Information on TikTok*, TikTok, <https://support.tiktok.com/en/account-and-privacy/account-privacy-settings/location-services-on-tiktok>.

26                   <sup>360</sup> Gracelynn Wan, *These TikTok Accounts Are Hiding Child Sexual Abuse Material In Plain Sight*, Forbes (Nov. 14, 2022) <https://www.forbes.com/sites/alexandralevine/2022/11/11/tiktok-private-csam-child-sexual-abuse-material/?sh=749d6cb63ad9>.

27                   <sup>361</sup> TikTok Terms of Service, <https://www.tiktok.com/legal/page/us/terms-of-service/en>.

1           477. ByteDance designed TikTok to offer two-factor authentication but does not require  
2 users to enable it. In fact, when a user creates a new account, the default setting disables the two-  
3 factor authentication.<sup>362</sup>

4           478. Furthermore, TikTok allows more than one device to be simultaneously logged into  
5 a single account, allowing multiple predators to use one “Post-in-Private” account simultaneously.

6           479. ByteDance’s “Post-in-Private” accounts feature also facilitate the grooming of  
7 children and adolescents by adult predators. Adult predators can store CSAM videos in “Your  
8 Private Videos” and then show them to adolescent users as a grooming tool. Should adult predators  
9 convince adolescent users to create CSAM of themselves in the “Post-in-Private” accounts, the  
10 “Your Private Videos” feature makes it easy for the videos to be produced, uploaded, and stored.

11           480. Another defective feature of TikTok is its livestream product, “TikTok LIVE.”  
12 Although ByteDance’s policy restricts access for anyone under eighteen to “TikTok LIVE,”  
13 TikTok’s design, as discussed above, does not incorporate an age verification protocol, so it is easy  
14 for underage users to access this feature.<sup>363</sup>

15           481. Within “TikTok LIVE” is another feature called “LIVE Gifts” for “viewers to react  
16 and show their appreciation for [] LIVE content in real-time.”<sup>364</sup> TikTok then awards “Diamonds”  
17 to LIVE creators based on the popularity of their content. “One way for creators to collect  
18 “Diamonds is to receive Gifts from viewers on [their] LIVE videos.” Creators awarded “Diamonds”  
19 “may obtain a Reward Payment in money or in virtual items.”<sup>365</sup>

20           482. ByteDance’s design of the “LIVE Gifts” and “Diamonds” rewards greatly increases  
21 the risk of adult predators targeting adolescent users for sexual exploitation, sextortion, and CSAM.  
22 According to Leah Plunket, an assistant dean at Harvard Law School, “TikTok LIVE” is “the digital  
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24 <sup>362</sup> *How your email and phone number are used on TikTok*, TikTok,  
25 <https://support.tiktok.com/en/account-and-privacy/personalized-ads-and-data/how-your-phone-number-is-used-on-tiktok>.

26 <sup>363</sup> *What is TikTok LIVE?*, TikTok, <https://support.tiktok.com/en/live-gifts-wallet/tiktok-live/what-is-tiktok-live>.

27 <sup>364</sup> *LIVE Gifts on TikTok*, TikTok, <https://support.tiktok.com/en/live-gifts-wallet/tiktok-live/live-gifts-on-tiktok>.

28 <sup>365</sup> *LIVE Gifts on TikTok*, TikTok, <https://support.tiktok.com/en/live-gifts-wallet/tiktok-live/live-gifts-on-tiktok>.

equivalent of going down the street to a strip club filled with 15-year-olds.”<sup>366</sup> “Livestreams on [TikTok] are a popular place for men to lurk and for young girls—enticed by money and gifts—to perform sexually suggestive acts.”<sup>367</sup>

483. Another of TikTok’s defective features enables predators to communicate privately with youth, with virtually no evidence of what was exchanged. The private messaging or “Direct messaging” feature allows a user to send a direct private message to another user. Predators use these messages to identify children willing to respond to a stranger’s message and then prey on the child’s vulnerabilities.

484. Although Tiktok’s features enable predators, TikTok does not have any feature to allow users to specifically report CSAM.<sup>368</sup>

485. Federal law mandates that ByteDance reports suspected CSAM to NCEMC under 18 U.S.C. § 2258A. To limit and avoid its reporting requirements under federal law, ByteDance purposely designed its products—which it knows are used by children, including children under 13—not to incorporate modern CSAM detection technology. This technology would be free for ByteDance to implement within its product design.

486. Furthermore, in violation of 18 U.S.C. § 2258A, ByteDance knowingly fails to report massive amounts of material in violation of 18 U.S.C. § 2256 and 18 U.S.C. § 1466A.

487. ByteDance knowingly fails to take feasible, adequate, and readily available measures to remove these contraband materials from its product in a timely fashion.

<sup>366</sup> Alexandra Levine, *How TikTok Live Became a Strip Club Filled with 15 Year Olds*, Forbes (Apr. 27, 2022), <https://www.forbes.com/sites/alexandralevine/2022/04/27/how-tiktok-live-became-a-strip-club-filled-with-15-year-olds/?sh=5d6cf08d62d7>.

<sup>367</sup> Alexandra S. Levine, *How TikTok LIVE Became ‘A Strip Club Filled with 15-Year Olds,’* Forbes, <https://www.forbes.com/sites/alexandralevine/2022/04/27/how-tiktok-live-became-a-strip-club-filled-with-15-year-olds/?sh=64c0447362d7>.

<sup>368</sup> Canadian Centre for Child Protection, *Reviewing Child Sexual Abuse Material Reporting Functions on Popular Platforms*, [https://protectchildren.ca/pdfs/C3P\\_ReviewingCSAMMaterialReporting\\_en.pdf](https://protectchildren.ca/pdfs/C3P_ReviewingCSAMMaterialReporting_en.pdf).

1 488. ByteDance made approximately 596 reports to NCMEC in 2019 and 22,692 reports  
2 in 2020.<sup>369</sup> However, ByteDance failed to report materials, violating the reporting requirements of  
3 18 U.S.C. § 2258A in 2019.

4 489. Users have reported “Post-in-Private” CSAM videos to TikTok, and ByteDance  
5 responded that no violations of its policy were found. One user searched for and contacted multiple  
6 TikTok employees to sound the alarm that CSAM was being created and shared within TikTok’s  
7 “Post-in-Private” accounts. This user did not receive a single response to her concerns.<sup>370</sup>

8 490. ByteDance nonetheless continues to make false representations that they will “take  
9 immediate action to remove content, terminate accounts, and report cases to NCMEC and law  
10 enforcement as appropriate.”<sup>371</sup>

11 491. ByteDance gains revenue for every daily user on TikTok in North America. Each  
12 user and their data are worth income, and ByteDance continues to benefit financially from predators  
13 who commit sexual abuse against children and/or share CSAM using ByteDance’s product.

14 **5. ByteDance failed to adequately warn about the harms its product**  
15 **causes or to provide instructions regarding safe use.**

16 492. Since TikTok’s inception, ByteDance has failed to adequately warn young users  
17 about the physical and mental health risks its product poses. These risks include, but are not limited  
18 to, product abuse and addiction, sexual exploitation from adult users, dissociative behavior, damage  
19 to body image, social isolation, and a plethora of mental health disorders like body dysmorphia,  
20 eating disorders, anxiety, depression, insomnia, ADD/ADHD exacerbation, suicidal ideation, self-  
21 harm, suicide, and death.

22 493. ByteDance targets young users via advertising and marketing materials distributed  
23 throughout traditional as well as digital media, including other social media products. ByteDance  
24

25 <sup>369</sup> Community guidelines enforcement report, TikTok (2022),  
26 <https://www.tiktok.com/transparency/en-us/community-guidelines-enforcement-2020-2/>.

27 <sup>370</sup> Gracelynn Wan, *These TikTok Accounts Are Hiding Child Sexual Abuse Material In Plain*  
*Sight*, Forbes (Nov. 14, 2022), <https://www.forbes.com/sites/alexandralevine/2022/11/11/tiktok-private-csam-child-sexual-abuse-material/?sh=290dbfa63ad9>

28 <sup>371</sup> *Protecting Against Exploitative Content*, TikTok, <https://newsroom.tiktok.com/en-us/protecting-against-exploitative-content>.

1 fails to provide adequate warnings in advertising and marketing campaigns to potential adolescent  
2 consumers of the physical and mental harms associated with using TikTok.

3 494. ByteDance heavily advertises its product on YouTube and Snapchat, where it knows  
4 it can effectively reach younger users. In 2019, for example, 80 percent of TikTok's advertising  
5 spending was on Snapchat.<sup>372</sup>

6 495. One TikTok ad compiles viral videos featuring people of all ages and sets the video  
7 to the pandemic musical hit "Bored in the House," by a popular TikTok creator. The 15-second  
8 video, titled "It Starts On TikTok," notes, "if it's in culture, it starts on TikTok."<sup>373</sup> Zhu highlighted  
9 the importance of the U.S. teen market to TikTok, admitting that in China, "teenage culture doesn't  
10 exist" because "teens are super busy in school studying for tests, so they don't have the time and  
11 luxury to play social media apps." On the other hand, teen culture in the United States is "a golden  
12 audience."<sup>374</sup>

13 496. Other advertisements ByteDance places on YouTube promote TikTok as a family-  
14 friendly product. For example, one commercial features parents impersonating their children,  
15 explaining that "parents roasting their kids is the best kind of family bonding."<sup>375</sup> Another TikTok  
16 ad asks content creators what TikTok means to them. Responses include "family," "sharing special  
17 moments with my daughter," and a featured appearance by well-known TikTok creator Addison  
18 Rae, who says TikTok represents "family and fun."<sup>376</sup>

19 497. ByteDance released another TikTok ad, part of the "It Starts on TikTok" ad  
20 campaign, and scheduled it to release on the linear TV, digital media, digital out-of-home, radio  
21  
22

23 <sup>372</sup> *TikTok – Snapchat's Biggest Advertiser – What's the Strategy*, Media Radar (Feb. 24, 2020),  
24 <https://mediaradar.com/blog/tiktok-snapchat-advertising-strategy/>.

25 <sup>373</sup> *TikTok, It Starts on TikTok: Bored in the House*, YouTube (Sept. 9, 2020),  
26 <https://www.youtube.com/watch?v=DWZCgkmcIjE>.

27 <sup>374</sup> Paul Mozur, *Chinese Tech Firms Forced to Choose Market: Home or Everywhere Else*, N.Y.  
28 Times (Aug. 9, 2016), <https://www.nytimes.com/2016/08/10/technology/china-homegrown-internet-companies-rest-of-the-world.html>.

<sup>375</sup> *Family Impressions, Compilation*, TikTok's Official YouTube Page,  
<https://www.youtube.com/watch?v=6EYzm25gW-s>.

<sup>376</sup> *TikTok Creators Share Their Thoughts About TikTok*, TikTok's Official YouTube Page  
<https://www.youtube.com/watch?v=KAveGBv7HVM>.

1 and TikTok's own social channels.<sup>377</sup> The tagline for the campaign was "[l]oving all of you and the  
2 things you do. Celebrating you" and featured a series of viral clips of various cheerful scenes  
3 depicting people gathered with friends and family of ages.

4 498. ByteDance is also one of the biggest advertisers on Snapchat. In 2019, ByteDance  
5 accounted for 4.4% of Snapchat's advertising revenue.<sup>378</sup> ByteDance knows that advertising on  
6 Snapchat is an effective way to reach a young audience. Snap claims that its Snapchat product  
7 reaches 90% of people aged 13-24 years old, and 75% of 13-34 year olds in the United States.

8 499. Despite its funny, cheerful ads featuring smiling families and funny images, TikTok,  
9 as designed, presents serious risks to young users on the platform, through its distinctive and  
10 manipulative product features, including a lack of adequate age and identity verification tools, as  
11 well as inadequate parental controls.

12 500. ByteDance fails to adequately warn young users of these risks beginning with the  
13 first stages of the product registration process. At account setup, TikTok contains no warning labels,  
14 banners, or conspicuous messaging to adequately inform adolescent users of product risks, potential  
15 dangers, and physical and mental harm associated with usage of the product. Instead, ByteDance  
16 allows underage users to easily create an account (or multiple accounts) and fully access the  
17 product.

18 501. ByteDance's lack of appropriate warnings continues once a child has TikTok.  
19 ByteDance does not suitably inform child users that their data will be tracked, used to help build a  
20 unique algorithmic profile, and potentially sold to TikTok's advertising clients.

21 502. Alarmingly, ByteDance also does not adequately warn young users before  
22 facilitating adult connections and interactions that adult predators use its product.

23 503. ByteDance's failure to adequately warn young users about the risks of the product  
24 continues even if they display signs of addiction or habitual and compulsive use. Besides the

25  
26 <sup>377</sup> Todd Spangler, *TikTok Launches Biggest-Ever Ad Campaign as Its Fate Remains Cloudy*,  
Variety (Aug. 10, 2020), <https://variety.com/2020/digital/news/tiktok-advertising-brand-campaign-sale-bytedance-1234738607/>.

27 <sup>378</sup> Robert Williams, *TikTok is the biggest advertiser on Snapchat, study says*, MarketingDive  
28 (March 16, 2020), <https://www.marketingdive.com/news/tiktok-is-the-biggest-advertiser-on-snapchat-study-says/574164/>.



1 disabled by default “Take a Break” reminder, ByteDance does not warn users when their screen  
2 time reaches harmful levels or when young users are accessing the product on a habitual basis.

3 504. Not only does ByteDance fail to adequately warn users about the risks associated  
4 with TikTok, but it also does not provide sufficient instructions on how children can safely use the  
5 product. A reasonable and responsible company would instruct children on best practices and safety  
6 protocols when using a product known to contain danger and health risks.

7 505. ByteDance, however, fails to adequately warn users that:

- 8 a. sexual predators use its product to produce and distribute CSAM;
- 9 b. adult predators targeting children for sexual exploitation, sextortion, and  
10 CSAM are prevalent on ByteDance’s product;
- 11 c. usage of its product can increase the risk of children being targeted and  
12 sexually exploited by adult predators;
- 13 d. usage of its product can increase risky and uninhibited behavior in children,  
14 making them easier targets to adult predators for sexual exploitation,  
15 sextortion, and CSAM; and,
- 16 e. end-to-end encryption and/or the ephemeral nature of ByteDance’s direct  
17 messaging product prevents the reporting of CSAM.

18 506. ByteDance failed to adequately warn parents about all of the foregoing dangers and  
19 harms.

20 **F. GOOGLE MARKETS AND DESIGNS YOUTUBE TO ADDICT YOUNG**  
21 **USERS, SUBSTANTIALLY CONTRIBUTING TO THE MENTAL**  
22 **HEALTH CRISIS**

23 507. Eric Schmidt, the former CEO of Google and more recently, Alphabet, YouTube’s  
24 corporate parent, recently acknowledged the powerful, and purposeful, addictive effect of social  
25 media. Social media products are about “maximizing revenue,” Mr. Schmidt said, and the best way  
26 to maximize revenue is to “maximize engagement.” As Mr. Schmidt continued, in pursuit of their  
27  
28

1 goal of maximizing engagement to increase revenues, social media products “play into the  
2 addiction capabilities of every human.”<sup>379</sup>

3 508. Google’s YouTube product is no exception. It includes specific, carefully calibrated  
4 features that are known to exploit the mental processes of its users to keep them engaged for as  
5 long, as frequently, and as intensely as possible. Google knows that children and teenagers who  
6 flock in droves to its YouTube product are particularly susceptible to these features. The impact of  
7 YouTube’s addictive power on American youth has been devastating.

### 8 **1. Background and overview of YouTube.**

9 509. YouTube is a social media product that allows users to post and consume countless  
10 hours of video content about virtually any topic imaginable. YouTube is available without any age  
11 verification feature or adequate parental controls, and comes pre-installed in many Smart-TVs,  
12 mobile devices, various digital media players like Roku, and video game consoles like PlayStation,  
13 Wii, X-box and Nintendo.

14 510. YouTube allows users to search for specific video content. It also employs a  
15 powerful algorithm that exploits detailed user information to target each individual user with hours  
16 upon hours of videos recommended by YouTube.

17 511. A group of design experts and computer scientists created YouTube and launched  
18 the product for public use in December 2005.

19 512. Technology behemoth Google quickly recognized YouTube’s huge profit potential.  
20 In 2006, just a year after YouTube’s launch, Google acquired YouTube for more than \$1.65 billion  
21 in Google stock. At the time, Google’s acquisition of YouTube was one of the largest-ever tech  
22 acquisitions.

23 513. YouTube primarily generates revenue by selling advertising. The more people who  
24 use YouTube and spend time on the site, the more ads YouTube can sell.<sup>380</sup> The ads are then  
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26 <sup>379</sup> Issie Lapowsky, *Eric Schmidt: Social Media Companies ‘Maximize Outrage’ for Revenue*,  
27 Protocol (Jan. 6, 2022), <https://www.protocol.com/bulletins/eric-schmidt-youtube-criticism>.

28 <sup>380</sup> Mark Bergen, *YouTube Executives Ignored Warnings, Letting Toxic Videos Run Rampant*,  
Bloomberg (Apr. 2, 2019), <https://www.bloomberg.com/news/features/2019-04-02/youtube-executives-ignored-warnings-letting-toxic-videos-run-rampant>.

1 embedded or placed within the endless stream of videos recommended to the user by YouTube's  
2 algorithm.

3 514. By 2012, YouTube users were watching close to four billion hours of video every  
4 month. Yet, the average YouTube user spent just fifteen minutes daily engaged with the product.<sup>381</sup>  
5 Users "were coming to YouTube when they knew what they were coming to look for."<sup>382</sup> They  
6 employed the product to identify and watch certain video content, and then they were done.

7 515. To drive greater revenue, "YouTube . . . set a company-wide objective to reach one  
8 billion hours of viewing a day[.]"<sup>383</sup>

9 516. As Susan Wojcicki, YouTube's CEO explained, the goal of a "billion hours of daily  
10 watch time gave our tech people a North Star."<sup>384</sup>

11 517. Google decided that "the best way to keep eyes on the site" was to introduce a  
12 feature that would "[recommend] videos, [that were playing] or after one was finished."<sup>385</sup>

13 518. That new product feature uses a recommendation algorithm to identify and push  
14 additional videos to users, which YouTube plays automatically, through a feature called "autoplay."  
15 Autoplay begins the next video as soon as the previous videos ends, creating a constant stream of  
16 content.

17 519. Google's design changes worked. Today, YouTube "has over 2 billion monthly  
18 logged-in users."<sup>386</sup> And that 2 billion figure does not capture all product usage because YouTube,  
19 by design, allows users to consume videos without logging in or registering an account.

20  
21 <sup>381</sup> John Seabrook, *Streaming Dreams: YouTube Turns Pro*, New Yorker (Jan. 16, 2012),  
<https://www.newyorker.com/magazine/2012/01/16/streaming-dreams>.

22 <sup>382</sup> Casey Newton, *How YouTube Perfected the Feed*, Verge (Aug. 30, 2017),  
<https://www.theverge.com/2017/8/30/16222850/youtube-google-brain-algorithm-video-recommendation-personalized-feed>.

23 <sup>383</sup> Mark Bergen, *YouTube Executives Ignored Warnings, Letting Toxic Videos Run Rampant*,  
24 Bloomberg (Apr. 2, 2019), <https://www.bloomberg.com/news/features/2019-04-02/youtube-executives-ignored-warnings-letting-toxic-videos-run-rampant>.

25 <sup>384</sup> Mark Bergen, *YouTube Executives Ignored Warnings, Letting Toxic Videos Run Rampant*,  
26 Bloomberg (Apr. 2, 2019), <https://www.bloomberg.com/news/features/2019-04-02/youtube-executives-ignored-warnings-letting-toxic-videos-run-rampant>.

27 <sup>385</sup> Mark Bergen, *YouTube Executives Ignored Warnings, Letting Toxic Videos Run Rampant*,  
28 Bloomberg (Apr. 2, 2019), <https://www.bloomberg.com/news/features/2019-04-02/youtube-executives-ignored-warnings-letting-toxic-videos-run-rampant>.

<sup>386</sup> *YouTube for Press*, YouTube, <https://blog.youtube/press/>.

2. **Google intentionally encourages youth to use YouTube and then leverages that use to increase revenue.**

520. Google knows that children and teenagers use YouTube in greater proportions than older demographics. YouTube now ranks as the world’s most popular social media product for minors. According to one recent report, more than 95% of children ages 13-17 have used YouTube.<sup>387</sup> Nearly 20% of U.S. teens use YouTube almost constantly.<sup>388</sup> Among U.S. teenagers who regularly use social media, 32% “wouldn’t want to live without” YouTube.<sup>389</sup>

521. Rather than ensuring minors are not inappropriately or excessively using YouTube, Google has sought to dominate their attention.

522. YouTube’s age controls are defective (or non-existent, since registration is not required). In addition, Google has developed and marketed a version of YouTube, YouTube Kids, explicitly targeted at children under 13. Google developed this product to encourage early—and therefore lasting—adoption of YouTube by children.

523. Google knows that a robust and committed base of young users is key to maximizing advertising revenue. Indeed, it has aggressively touted its hold on child users to advertisers.

524. In 2014, for example, Google pitched its YouTube product to Hasbro, a popular toy manufacturer, and specifically boasted of the product’s immense popularity among children, noting that it was “unanimously voted as the favorite website of kids 2-12” and that “93% of tweens” use the product.<sup>390</sup>

<sup>387</sup> Emily Vogels et al., *Teens, Social Media and Technology 2022*, Pew Rsch. Ctr. (Aug. 10, 2022), <https://www.pewresearch.org/internet/2022/08/10/teens-social-media-and-technology-2022>.

<sup>388</sup> Emily Vogels et al., *Teens, Social Media and Technology 2022*, Pew Rsch. Ctr. (Aug. 10, 2022), <https://www.pewresearch.org/internet/2022/08/10/teens-social-media-and-technology-2022>.

<sup>389</sup> Victoria Rideout et al., *Common Sense Census: Media Use by Tweens and Teens, 2021* at 31, Common Sense Media (2022), [https://www.commonsensemedia.org/sites/default/files/research/report/8-18-census-integrated-report-final-web\\_0.pdf](https://www.commonsensemedia.org/sites/default/files/research/report/8-18-census-integrated-report-final-web_0.pdf).

<sup>390</sup> Complaint for Permanent Injunction, Civil Penalties, and Other Equitable Relief, *FTC v. Google LLC* et al., No. 1-19-cv-02642-BAH, at 6 (D.D.C. Sept. 4, 2019) Dkt. #1-1. [https://www.ftc.gov/system/files/documents/cases/youtube\\_complaint\\_exhibits.pdf](https://www.ftc.gov/system/files/documents/cases/youtube_complaint_exhibits.pdf).

525. In 2015, Google gave a similar presentation to toy manufacturer Mattel, the maker of Barbie and other popular kids' toys, highlighting children's widespread use of YouTube to persuade Mattel to display digital ads on the site.<sup>391</sup>

526. The FTC has aptly summarized Google's pitch to advertisers concerning the value of its youth user base.<sup>392</sup> For example, Google boasted that YouTube "is today's leader in reaching children age 6-11;" "the new 'Saturday Morning Cartoons';" "unanimously voted as the favorite website of kids 2-12;" "the #1 website regularly visited by kids;" and used by "93% of tweens."<sup>393</sup>

527. Many of YouTube's most-viewed videos are kid-focused, and the most subscribed and highest paid YouTubers are children. With over 12 billion views, "Baby Shark Dance," a video aimed at toddlers, is the most viewed video in the history of YouTube— and it and five other child-focused videos make up the top ten YouTube videos of all time.<sup>394</sup> Child creators also dominate top-earner lists year after year. Ryan Kaji of Ryan's World (f/k/a Ryan ToysReview), a channel featuring now 12-year-old Ryan Kaji unboxing children's toys, has been among YouTube's Top 10 most-subscribed channels in the United States since 2016.<sup>395</sup> Ryan started Ryan's World in 2015 when he was only 3. By 2017, his videos had over 8 billion views, and by 2018, he was the highest-earning YouTuber in the world.<sup>396</sup>

<sup>391</sup> Complaint for Permanent Injunction, Civil Penalties, and Other Equitable Relief, *FTC v. Google LLC et al.*, No. 1-19-cv-02642-BAH, at 3 (D.D.C. Sept. 4, 2019) Dkt. #1-1. [https://www.ftc.gov/system/files/documents/cases/youtube\\_complaint\\_exhibits.pdf](https://www.ftc.gov/system/files/documents/cases/youtube_complaint_exhibits.pdf).

<sup>392</sup> *Google and YouTube Will Pay Record \$170 Million for Alleged Violations of Children's Privacy Law*, FTC (Sept. 4, 2019), <https://www.ftc.gov/news-events/news/press-releases/2019/09/google-youtube-will-pay-record-170-million-alleged-violations-childrens-privacy-law>. ("YouTube touted its popularity with children to prospective corporate clients", said FTC Chairman Joe Simons.)

<sup>393</sup> Complaint for Permanent Injunction, Civil Penalties, and Other Equitable Relief, *FTC v. Google LLC et al.*, No. 1-19-cv-02642-BAH, at 3, 12, and 6-7 (D.D.C. Sept. 4, 2019) Dkt. #1-1. [https://www.ftc.gov/system/files/documents/cases/youtube\\_complaint\\_exhibits.pdf](https://www.ftc.gov/system/files/documents/cases/youtube_complaint_exhibits.pdf).

<sup>394</sup> Most Viewed Videos of All Time • (Over 700M views) - YouTube. [https://www.youtube.com/playlist?list=PLirAqAtl\\_h2r5g8xGajEwdXd3x1sZh8hC](https://www.youtube.com/playlist?list=PLirAqAtl_h2r5g8xGajEwdXd3x1sZh8hC)

<sup>395</sup> Madeline Berg, *The Highest-Paid YouTube Stars of 2019: The Kids Are Killing It*, Forbes (Dec. 18, 2019), <https://www.forbes.com/sites/maddieberg/2019/12/18/the-highest-paid-youtube-stars-of-2019-the-kids-are-killing-it/?sh=4c3df9a438cd>; Madeline Berg, *The Highest-Paid YouTube Stars 2017: Gamer DanTDM Takes The Crown With \$16.5 Million*, Forbes (Dec. 7, 2017), <https://www.forbes.com/sites/maddieberg/2017/12/07/the-highest-paid-youtube-stars-2017-gamer-dantdm-takes-the-crown-with-16-5-million/?sh=72de79413979>

<sup>396</sup> *Gamer DanTDM Takes The Crown With \$16.5 Million*, Forbes (Dec. 7, 2017), <https://www.forbes.com/sites/maddieberg/2017/12/07/the-highest-paid-youtube-stars-2017->

528. As with other defendants, once Google lures children in, it then mines them (and all other users) for a breathtaking amount of data. Google’s current privacy policy, which includes the YouTube product’s data collection, reveals how sweeping this data collection is. It states that Google tracks:

- a. “information about the apps, browsers, and devices you use to access Google services . . . include[ing] unique identifiers, browser type and settings, device type and settings, operating system, mobile network information including carrier name and phone number, and application version number. We also collect information about the interaction of your apps, browsers, and devices with our services, including IP address, crash reports, system activity, and the date, time, and referrer URL of your request.”
- b. “your activity in our services . . . includ[ing] terms you search for[;] videos you watch[;] views and interactions with content and ads[;] voice and audio information[;] purchase activity[;] people with whom you communicate or share content[;] activity on third-party sites and apps that use our services[;] and Chrome browsing history you’ve synced with your Google Account.”
- c. “Your location information [including] GPS and other sensor data from your device[;] IP address[;] activity on Google services, such as your searches and places you label like home or work[;] [and] information about things near your device, such as Wi-Fi access points, cell towers, and Bluetooth-enabled devices;”<sup>397</sup>

529. Google’s privacy policy also indicates that, like other Defendants, it purchases data about its users from data brokers, which it euphemistically refers to as “trusted partners” or “marketing partners.”<sup>398</sup>

530. As with other Defendants, YouTube’s collection and analysis of user data allows it to assemble virtual dossiers on its users, covering hundreds if not thousands of user-specific data segments. This, in turn, allows advertisers to micro-target marketing and advertising dollars to very specific categories of users, who can be segregated into pools or lists using YouTube’s data

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[gamer-dantdm-takes-the-crown-with-16-5-million/?sh=72de79413979](https://www.fox.com/story/gamer-dantdm-takes-the-crown-with-16-5-million/?sh=72de79413979); Natalie Robehmed & Madeline Berg, *Highest-Paid YouTube Stars 2018: Markiplier, Jake Paul, PewDiePie And More*, *Forbes* (Dec. 3, 2018), <https://www.forbes.com/sites/natalierobehmed/2018/12/03/highest-paid-youtube-stars-2018-markiplier-jake-paul-pewdiepie-and-more/?sh=7d909c3f909a>.

<sup>397</sup> Information Google Collects. <https://policies.google.com/privacy?hl=en#infocollect>.

<sup>398</sup> Information Google Collects. <https://policies.google.com/privacy?hl=en#infocollect>.



1 segments. Advertisers purchase ad real estate space on users' feeds, which allow them to place the  
 2 right ads in front of these micro-targeted segments of users--including children, both in the main  
 3 YouTube frame and in the YouTube Kids product. Only a fraction of these data segments come  
 4 from content knowingly designated by users for publication or explicitly provided by users in their  
 5 account profiles. Instead, many of these data segments are collected by YouTube through  
 6 surveillance of each user's activity while using the product and even when logged off the product.<sup>399</sup>

7 531. As with Meta, Google's data policy does not inform users that the more time  
 8 individuals spend using YouTube, the more ads Google can deliver and the more money it can  
 9 make, or that the more time users spend on YouTube, the more YouTube learns about them, and  
 10 the more it can sell to advertisers the ability to micro-target highly personalized ads.

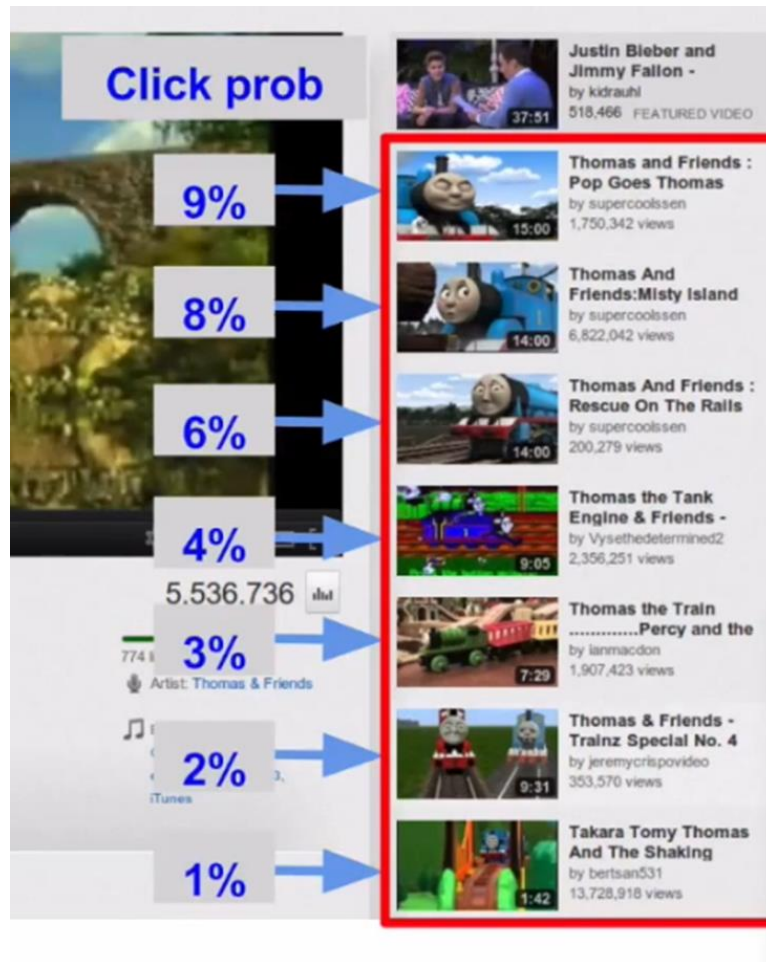
11 532. Google's secret virtual dossiers on its users, including child users, fuel its  
 12 algorithms. The company relies on this data—including data plainly reflecting use by children—to  
 13 train its algorithms. A Google engineer explained in a 2014 presentation:

14 What do I mean by a training example? It's a single-user  
 15 experience. On YouTube, perhaps it's that one [Thomas the Tank  
 16 Engine] webpage my son saw six months ago, along with all the  
 17 recommendations that we showed him. We also record the outcome  
 to know whether the recommendations we made are good or  
 whether they're bad. That's a single training exercise. On a large  
 property, you can easily get into hundreds of billions of these.<sup>400</sup>

18 The engineer illustrated this with a slide, excerpted below, presenting how algorithmic analysis  
 19 both structured the format of recommendations of Thomas the Tank Engine YouTube videos and  
 20 provided information to inform algorithmic training through user engagement:

26 <sup>399</sup> About Targeting for Video Campaigns, Google,  
 27 <https://support.google.com/youtube/answer/2454017?hl=en>.

28 <sup>400</sup> Alex Woodie, *Inside Sibyl, Google's Massively Parallel Machine Learning Platform*,  
*Datanami* (Jul. 17, 2014) <https://www.datanami.com/2014/07/17/inside-sibyl-googles-massively-parallel-machine-learning-platform/>.



533. Through these and other efforts, YouTube has delivered massive amounts of advertising revenue to Google. In 2021 alone, YouTube generated about \$29 billion in revenue selling ads on its site.<sup>401</sup>

### 3. Google intentionally designed product features to addict children and adolescents.

534. Google devised and continues to employ interrelated product features to increase usage and maximize engagement by teenagers and children. Simply put, YouTube's product features are engineered to induce excessive use and to addict adolescents and children to the product.

<sup>401</sup> Andrew Hutchinson, *YouTube Generated \$28.8 Billion in Ad Revenue in 2021*, Social Media Today (Feb. 2, 2021), <https://www.socialmediatoday.com/news/youtube-generated-288-billion-in-ad-revenue-in-2021-fueling-the-creator/618208/>; Jennifer Elias, *YouTube Is a Media Juggernaut That Could Soon Equal Netflix in Revenue*, CNBC (Apr. 27, 2021), <https://www.cnbc.com/2021/04/27/youtube-could-soon-equal-netflix-in-revenue.html>.

1                   a.     **Google’s age-verification measures and parental controls are**  
2                             **defective.**

3             535. Google’s strategy to entrench minor users begins with access. The company  
4 purports to impose a minimum age requirement and claims to verify the age of its users. But those  
5 features are defective, as they do little to prevent children and teenagers from using the product.

6             536. Anyone with access to the Internet, regardless of age, can use YouTube and access  
7 every video available through the product without registering an account or verifying their age.  
8 YouTube does not even ask for age information before allowing users to consume YouTube videos.

9             537. A user needs an account to post content or like (or comment) on videos. But to get  
10 one, a user needs only enter a valid email address and a birthday. Google does nothing to verify the  
11 birthday entered by users in the U.S.—and the product freely permits users to change their birthdays  
12 in their account settings after creating an account.

13            538. YouTube’s defective age verification feature means that Google fails to protect  
14 children from other product features discussed below that Google knows to be harmful to kids.

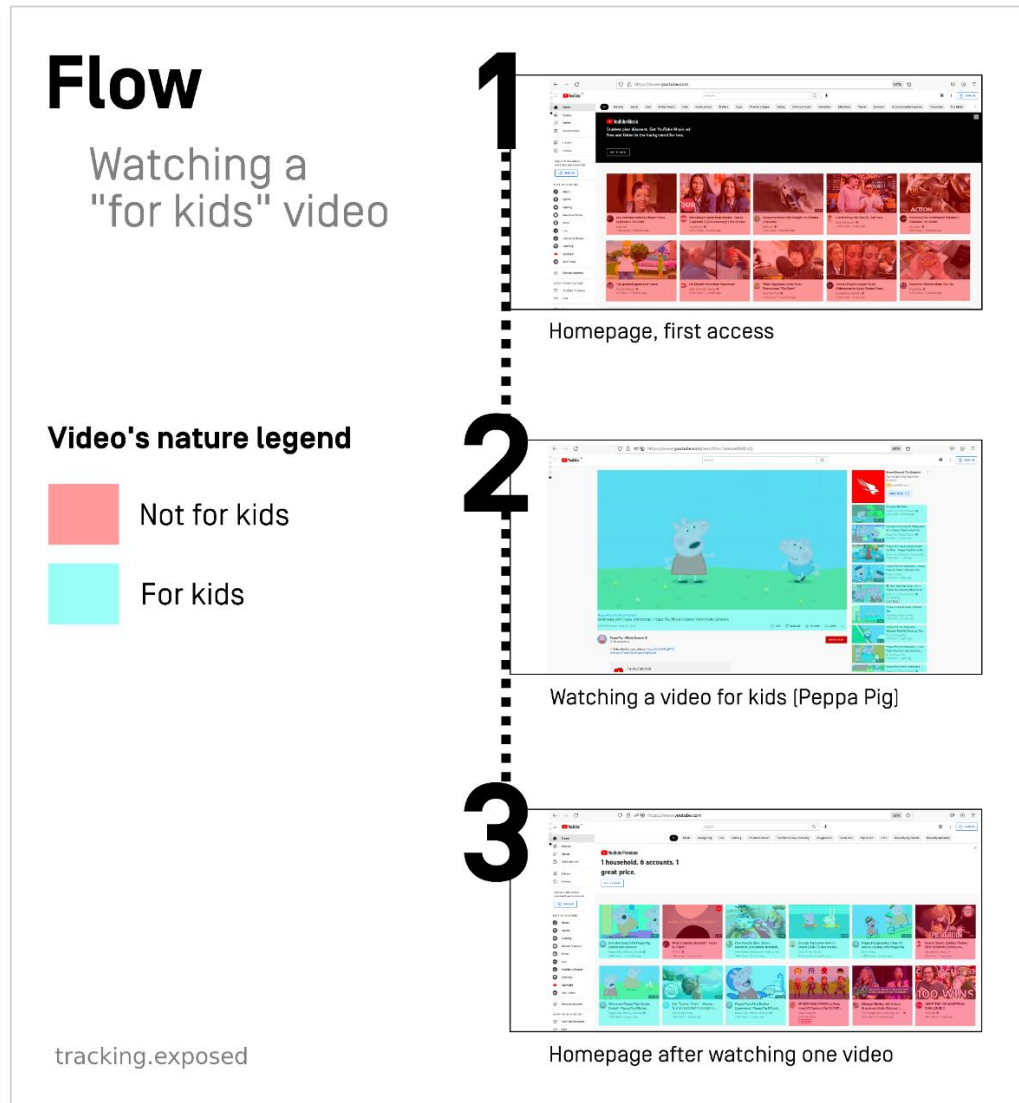
15            539. For example, for users 13-17, Google claims to disable YouTube’s autoplay feature.  
16 However, that measure is virtually meaningless because children can use YouTube without logging  
17 into any account or by logging in but misreporting their age.

18            540. Even if children use YouTube Kids, that product contains many of the same defects  
19 YouTube does, including a harmful, manipulative algorithm, as alleged below.

20            541. Google cannot credibly claim that it is unaware of the fact and extent of youth usage  
21 of YouTube. Google’s system can “identify children as being much younger than 13.”<sup>402</sup> According  
22 to Tracking Exposed, YouTube can rapidly identify a user as a child.<sup>403</sup>

23  
24  
25  
26  
27           <sup>402</sup> Tracking Exposed, Report: Non-Logged-In Children Using YouTube at 6 (Apr. 2022),  
<https://tracking.exposed/pdf/youtube-non-logged-kids-03July2022.pdf>.

28           <sup>403</sup> Tracking Exposed, Report: Non-Logged-In Children Using YouTube at 15, 18 (Apr. 2022),  
<https://tracking.exposed/pdf/youtube-non-logged-kids-03July2022.pdf>.



542. Google engineers have publicly admitted YouTube's algorithm tracks user age. As Google engineers outlined in a 2016 paper on YouTube's recommendation system, "[d]emographic features are important for providing priors so that the recommendations behave reasonably for new users. The user's geographic region and device are embedded and concatenated. Simple binary and continuous features such as the user's gender, logged-in state and age are input directly into the network as real values normalized to  $[0; 1]$ ."<sup>404</sup>

<sup>404</sup> Paul Covington et al., *Deep Neural Networks for YouTube Recommendations*, Google (2016), <https://storage.googleapis.com/pub-tools-public-publication-data/pdf/45530.pdf>.

1           543. The Tracking Exposed Report indicated that there was “strong evidence” that  
 2 Google’s systems continue to refine and develop a more precise estimate for under 18 users, but  
 3 the product does not “redirect them to YouTube Kids.”<sup>405</sup>

4                           **b. YouTube is defectively designed to inundate users with features**  
 5                           **that use intermittent variable rewards and reciprocity.**

6           544. Google uses a series of interrelated design features that exploit known mental  
 7 processes to induce YouTube’s users to use the product more frequently, for more extended periods,  
 8 and with more intensity (i.e., providing more comments and likes). Google knows children and  
 9 adolescents, whose brains are still developing, are particularly susceptible to these addictive  
 10 features.

11           545. Google designed its product so that when children and teenagers use it, they are  
 12 inundated with interface design features specifically designed to dominate their attention and  
 13 encourage excessive use. Every aspect of how YouTube presents the format of a given page with a  
 14 video is structured to ensure unimpeded viewing of the videos, alongside download, like, and share  
 15 buttons, plus recommendations for more videos to watch. The organization of these features is  
 16 carefully calibrated to adjust to the space constraints of a user’s device, such that minimal effort is  
 17 needed to watch a video unimpeded. YouTube even has an ambient mode that uses dynamic color  
 18 sampling so that the YouTube product adapts to the video being watched and the user is not  
 19 distracted by the video’s borders.<sup>406</sup>

20           546. Like the other Defendants, Google has designed YouTube with features that exploit  
 21 neuropsychology to maximize the time users (including children) spend using the product.

22           547. IVR features, such as notifications and likes, compel YouTube content creators and  
 23 consumers, particularly children, to use the product habitually and excessively. For example, in  
 24 order to create and upload content to YouTube, a user under 13 may submit a fictitious birthdate in  
 25 order to gain access to posting privileges. Once the young user has a logged-in account, they are

26  
 27 <sup>405</sup> Tracking Exposed, Report: Non-Logged-In Children Using YouTube at 6, 19 (Apr. 2022),  
<https://tracking.exposed/pdf/youtube-non-logged-kids-03July2022.pdf>.

28 <sup>406</sup> YouTube rolling out black dark theme, ‘Ambient Mode,’ and other video player updates (Oct.  
 24, 2022). <https://9to5google.com/2022/10/24/youtube-ambient-mode/>.

1 capable of receiving notifications and likes. For example, the logged in user can subscribe to  
 2 various YouTube channels, which in turn will send them notifications from various channels they  
 3 follow. Similarly, young content creators who upload videos to YouTube are able to track the likes  
 4 received by the video. These features psychologically reward creators who upload videos to  
 5 YouTube. As explained above, receiving a “Like” shows others’ approval and activates the brain’s  
 6 reward region.<sup>407</sup> Thus, users’ ability to like content encourages creators to use the product  
 7 compulsively, seeking additional pleasurable experiences.

8 548. Another YouTube defect is the design Google engineers deploy to induce “flow”  
 9 state among users, which as described above is dangerous to children because it induces excessive  
 10 use and poses a risk of addiction, compulsive use, and sleep deprivation.

11 549. YouTube uses two design features that induce flow state. The first is its panel of  
 12 recommended videos. YouTube recommends videos both on the home page and on each video page  
 13 in the “Up Next” panel.<sup>408</sup> This panel pushes an endless stream of videos that YouTube’s algorithm  
 14 selects and “suggests” to keep users watching by teasing a pipeline of upcoming content.

15 550. The second feature is autoplay, which complements the Up Next panel and  
 16 seamlessly takes users through the list of upcoming videos without users having to affirmatively  
 17 click on or search for other videos. This constant video stream—comprised of videos recommended  
 18 by YouTube’s algorithm—is the primary way Google increases the time users spend using its  
 19 product. This endless video succession induces users to enter a flow state of consumption, which  
 20 is particularly dangerous for children.

21 551. In an April 2021 letter to YouTube CEO Susan Wojcicki, the House Committee on  
 22 Oversight and Reform criticized the autoplay feature:

23 This places the onus on the child to stop their viewing activity, rather  
 24 than providing a natural break or end point. Without that natural  
 25

26 <sup>407</sup> See, e.g., Lauren E. Sherman et al., *The Power of the Like in Adolescence: Effects of Peer*  
 27 *Influence on Neural and Behavioral Responses to Social Media*, 27(7) Psych. Sci. 1027–35 (July  
 2016), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5387999/>.

28 <sup>408</sup> Recommended Videos, YouTube, <https://www.youtube.com/howyoutubeworks/product-features/recommendations/>.



1           stopping point, children are likely to continue watching for long  
2           periods of time.<sup>409</sup>

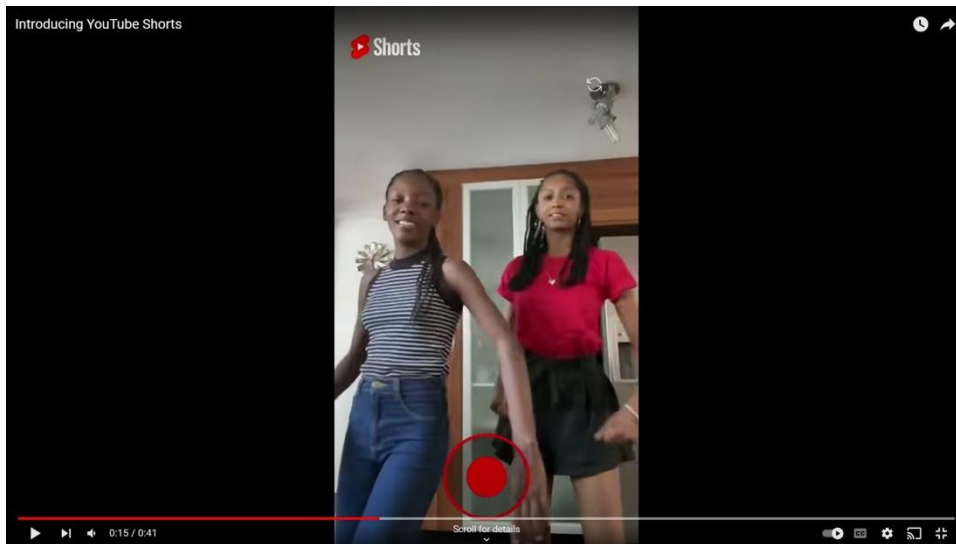
3           552. This defect is particularly acute for Google’s recently launched YouTube Shorts.  
4           YouTube Shorts enables users to create short videos up to sixty seconds in length, in a full-screen  
5           format popularized by TikTok and copied by Instagram Reels. As in Reels and TikTok, Shorts are  
6           presented in an algorithmically generated feed; users can watch new videos by swiping up on their  
7           smartphones. Instead of presenting videos chronologically, they are organized in a manner to drive  
8           the most watch time, as dictated by the algorithm. Indeed, Google hired TikTok’s North American  
9           head, Kevin Ferguson, and other TikTok engineers to develop YouTube Shorts.<sup>410</sup> And much like  
10          those other products, the ability to scroll continuously through YouTube Shorts content induces a  
11          “flow-state,” distorting users’ sense of time and facilitating extended use.

12          553. An important target audience for YouTube Shorts is children. For example,  
13          YouTube Shorts features content, such as child “influencers,” that appeals to children. YouTube  
14          Shorts also contains similar defects to other Defendants’ short form products, including the ability  
15          to scroll continuously through YouTube Shorts, inducing a “flow-state” that distorts users’ sense  
16          of time and facilitates extended use, and dangerous exploitation of “social comparison” techniques  
17          by promoting misleadingly idealized portrayals from influencers and others who are rewarded for  
18          posting popular material.

19          554. Almost immediately upon launch, Google began marketing YouTube Shorts to  
20          children. For example, Google launched an advertisement featuring images of children and  
21          teenagers (like in the screenshot below) engaging with the YouTube Shorts product.

22  
23  
24  
25          <sup>409</sup> Letter from Rep. Raja Krishnamoorthi, Chairman, Subcomm. on Economic and Consumer  
26          Policy, to Susan Wojcicki, CEO, YouTube (Apr. 6, 2021),  
27          <https://oversightdemocrats.house.gov/sites/democrats.oversight.house.gov/files/2021-04-06.RK%20to%20Wojcicki-YouTube%20re%20YouTube%20Kids%20Content.pdf>,

28          <sup>410</sup> Richard Nieva, *In the Age of TikTok, YouTube Shorts Is a Platform in Limbo*, Forbes (Dec. 20, 2022), <https://www.forbes.com/sites/richardnieva/2022/12/20/youtube-shorts-monetization-multiplatform/>.



555. Similarly, another advertisement for Shorts explains how creators on YouTube can keep revenue generated by their Shorts viewership, while an image of a video creator young enough to be in braces appears on screen.<sup>411</sup>



556. Shorts is one of YouTube's interrelated design features that exploit known mental processes to induce YouTube users to use the product more frequently, for more extended periods, and with more intensity (i.e., providing more comments and likes). Not surprisingly, given its

<sup>411</sup> Made on YouTube: New ways to join YPP, Shorts Monetization & Creator Music. <https://www.youtube.com/watch?v=h6TrvCV3NdU>.

1 copycat origin, the defects in Shorts replicate the defects in TikTok and Instagram Reels, discussed  
 2 above. Google knows or should have known that children, whose brains are still developing, are  
 3 particularly susceptible to such addictive features.

4 557. YouTube has monetized users' susceptibility to IVR by allowing creators who  
 5 obtain more than a thousand subscribers with four-thousand valid public watch hours to qualify for  
 6 the YouTube Partner Program. Once a creator obtains this elite status, they are rewarded with  
 7 "Super Chat" and "Super Stickers"—special images or distinct messages that other users can  
 8 purchase and place on a creator's channel.<sup>412</sup> Paid messages, including the amount donated, are  
 9 visible to all users. And the more a user pays for these promotions, the more prominent and longer  
 10 the image is displayed. Both features are intended to allow a user to show support for, or connect  
 11 with, their favorite YouTube creators. Similar to the "Likes" feature, this paid support activates the  
 12 reward center of the content creator's brain and releases dopamine while the creator is generating  
 13 revenue for YouTube.

14 **c. Google's algorithms are designed to maximize "watch time."**

15 558. Google engineers algorithms to recommend videos to YouTube users.

16 559. YouTube began building its' algorithms in 2008.<sup>413</sup> Its goal was to maximize how  
 17 long users spent watching YouTube videos.<sup>414</sup>

18 560. These algorithms select videos that populate the YouTube homepage, rank results  
 19 in user searches, and push videos for viewers to watch through the "Up Next" feature.

20 561. YouTube designed its algorithms to manipulate users and induce them to use  
 21 YouTube excessively.

22  
 23  
 24  
 25 <sup>412</sup> YouTube Partner Program: How to Make Money on YouTube,  
[https://www.youtube.com/intl/en\\_us/creators/how-things-work/video-monetization/](https://www.youtube.com/intl/en_us/creators/how-things-work/video-monetization/).

26 <sup>413</sup> Cristos Goodrow, *On YouTube's Recommendation System*, YouTube (Sept. 15, 2021),  
<https://blog.youtube/inside-youtube/on-youtubes-recommendation-system/>.

27 <sup>414</sup> Ben Popken, *As Algorithms Take Over, YouTube's Recommendations Highlight a Human*  
 28 *Problem*, NBC (Apr. 19, 2018), <https://www.nbcnews.com/tech/social-media/algorithms-take-over-youtube-s-recommendations-highlight-human-problem-n867596>.

1           562. A former YouTube engineer explained that when he designed YouTube’s algorithm,  
 2 YouTube wanted to optimize for one key metric: “watch time.”<sup>415</sup> The engineer elaborated that  
 3 “[i]ncreasing users’ watch time is good for YouTube’s business model” because it increases  
 4 advertising revenue.<sup>416</sup>

5           563. In 2012 the YouTube Head of Content Creator Communications, similarly  
 6 explained: “When we suggest videos, we focus on those that increase the amount of time that the  
 7 viewer will spend watching videos on YouTube, not only on the next view, but also successive  
 8 views thereafter.”<sup>417</sup>

9           564. The current algorithm uses deep-learning neural networks, a type of software that  
 10 returns outputs based on data fed into it.<sup>418</sup> The VP of Engineering at YouTube, explained that it is  
 11 “constantly evolving, learning every day from over 80 billion pieces of information [Google] calls  
 12 signals.”<sup>419</sup> Those signals include “watch and search history . . . , channel subscriptions, clicks,  
 13 watchtime, survey responses, and sharing, likes, and dislikes.”<sup>420</sup> They also include user  
 14 demographic information like age and gender.<sup>421</sup>

15           565. Google’s algorithm also “uses data from your Google Account activity to influence  
 16 your recommendations.”<sup>422</sup>

18 <sup>415</sup> William Turton, *How YouTube’s Algorithm Prioritizes Conspiracy Theories*, Vice (Mar. 5,  
 19 2018), <https://www.vice.com/en/article/d3w9ja/how-youtubes-algorithm-prioritizes-conspiracy-theories>.

20 <sup>416</sup> Jesselyn Cook & Sebastian Murdock, *YouTube Is a Pedophile’s Paradise*, Huffington Post  
 21 (Mar. 20, 2020), [https://www.huffpost.com/entry/youtube-pedophile-paradise\\_n\\_5e5d79d1c5b6732f50e6b4db](https://www.huffpost.com/entry/youtube-pedophile-paradise_n_5e5d79d1c5b6732f50e6b4db).

22 <sup>417</sup> Eric Meyerson, *YouTube Now: Why We Focus on Watch Time*, YouTube (Aug. 10, 2012),  
 23 <https://blog.youtube/news-and-events/youtube-now-why-we-focus-on-watch-time/>.

24 <sup>418</sup> Alexis C. Madrigal, *How YouTube’s Algorithm Really Works*, Atlantic (Nov. 8, 2018),  
 25 <https://www.theatlantic.com/technology/archive/2018/11/how-youtubes-algorithm-really-works/575212/>; Paul Covington et al., *Deep Neural Networks for YouTube Recommendations*,  
 26 Google (2016), <https://storage.googleapis.com/pub-tools-public-publication-data/pdf/45530.pdf>.

27 <sup>419</sup> Cristos Goodrow, *On YouTube’s Recommendation System*, YouTube (Sept. 15, 2021),  
 28 <https://blog.youtube/inside-youtube/on-youtubes-recommendation-system/>.

<sup>420</sup> Cristos Goodrow, *On YouTube’s Recommendation System*, YouTube (Sept. 15, 2021),  
<https://blog.youtube/inside-youtube/on-youtubes-recommendation-system/>.

<sup>421</sup> Paul Covington et al., *Deep Neural Networks for YouTube Recommendations*, Google (2016),  
<https://storage.googleapis.com/pub-tools-public-publication-data/pdf/45530.pdf>.

<sup>422</sup> Manage Your Recommendations and Search Results, Google,  
<https://support.google.com/youtube/answer/6342839?hl=en&co=GENIE.Platform%3DAndroid>.

1           566. The algorithm “develops dynamically” to predict which posts will hold the user’s  
 2 attention.<sup>423</sup> That is, it can also determine which “signals” are more important to individual users.  
 3 For example, if a user shares every video they watch, including those they rate low, the algorithm  
 4 learns to discount the significance of the user’s shares when recommending content.<sup>424</sup>

5           567. Besides the algorithm’s self-learning capability, Google also consistently refines the  
 6 algorithm, updating it “multiple times a month.”<sup>425</sup>

7           568. In 2017, the former technical lead for YouTube recommendations explained that  
 8 “one of the key things [the algorithm] does is it’s able to generalize.”<sup>426</sup> While older iterations  
 9 “were pretty good at saying, here’s another [video] just like” ones the user had watched, by 2017,  
 10 the algorithm could discern “patterns that are less obvious,” identifying “adjacent relationships” of  
 11 “similar but not exactly the same” content.<sup>427</sup>

12           569. Over time, the algorithm became increasingly successful in getting users to watch  
 13 recommended content. By 2018, YouTube Chief Product Officer Neal Mohan said that the  
 14 YouTube algorithm was responsible for more than 70% of users’ time using the product.<sup>428</sup> That  
 15 is, more than 70% of the time users spend on YouTube was from recommendations Google’s  
 16 algorithm pushed to them rather than videos identified by users through independent searches.

17  
 18  
 19  
 20 <sup>423</sup> Cristos Goodrow, *On YouTube’s Recommendation System*, YouTube (Sept. 15, 2021),  
 21 <https://blog.youtube/inside-youtube/on-youtubes-recommendation-system/>.

22 <sup>424</sup> Cristos Goodrow, *On YouTube’s Recommendation System*, YouTube (Sept. 15, 2021),  
 23 <https://blog.youtube/inside-youtube/on-youtubes-recommendation-system/>.

24 <sup>425</sup> Nilay Patel, *YouTube Chief Product Officer Neal Mohan on The Algorithm, Monetization, and*  
 25 *the Future for Creators*, Verge (Aug. 3, 2021), [https://www.theverge.com/22606296/youtube-](https://www.theverge.com/22606296/youtube-shorts-fund-neal-mohan-decoder-interview)  
 26 [shorts-fund-neal-mohan-decoder-interview](https://www.theverge.com/22606296/youtube-shorts-fund-neal-mohan-decoder-interview).

27 <sup>426</sup> Casey Newton, *How YouTube Perfected the Feed*, Verge (Aug. 30, 2017),  
 28 [https://www.theverge.com/2017/8/30/16222850/youtube-google-brain-algorithm-video-](https://www.theverge.com/2017/8/30/16222850/youtube-google-brain-algorithm-video-recommendation-personalized-feed)  
[recommendation-personalized-feed](https://www.theverge.com/2017/8/30/16222850/youtube-google-brain-algorithm-video-recommendation-personalized-feed).

<sup>427</sup> Casey Newton, *How YouTube Perfected the Feed*, Verge (Aug. 30, 2017),  
[https://www.theverge.com/2017/8/30/16222850/youtube-google-brain-algorithm-video-](https://www.theverge.com/2017/8/30/16222850/youtube-google-brain-algorithm-video-recommendation-personalized-feed)  
[recommendation-personalized-feed](https://www.theverge.com/2017/8/30/16222850/youtube-google-brain-algorithm-video-recommendation-personalized-feed).

<sup>428</sup> Joan E. Solsman, *YouTube’s AI Is the Puppet Master over Most of What You Watch*, CNET  
 (Jan. 20, 2018), [https://www.cnet.com/tech/services-and-software/youtube-cs-2018-neal-](https://www.cnet.com/tech/services-and-software/youtube-cs-2018-neal-mohan/)  
[mohan/](https://www.cnet.com/tech/services-and-software/youtube-cs-2018-neal-mohan/).

1           570. The algorithm also keeps users watching for longer periods. For instance, Mohan  
2 explained that mobile device users watch for more than 60 minutes on average per session “because  
3 of what our recommendations engines are putting in front of [them].”<sup>429</sup>

4           571. The algorithm is particularly effective at addicting teenagers to the product. In 2022,  
5 Pew Research Center found that “[a]bout three-quarters of teens visit YouTube daily, including  
6 19% who report using the site or app almost constantly.”<sup>430</sup>

7           572. A software engineer explained that the algorithm is “an addiction engine.”<sup>431</sup> He  
8 raised concerns with YouTube staff, who said they had no intention to change the algorithms. After  
9 all, the engineer explained, the algorithm works as intended: “it makes a lot of money.”<sup>432</sup>

10          573. Since users watch more than one billion hours of YouTube videos daily and  
11 approximately 70% of the time is spent on videos pushed to users by YouTube’s “recommendation  
12 engine,” Google’s algorithms are responsible for hundreds of millions of hours users spend  
13 watching videos on YouTube each day.<sup>433</sup>

14          574. The videos pushed out to users by Google’s “recommendation engine” are more  
15 likely to be addictive and more likely to lead to harm. For example, “fear-inducing videos cause  
16 the brain to receive a small amount of dopamine,” which acts as a reward and creates a desire to do  
17 something over and over.<sup>434</sup> That dopaminergic response makes it more likely that a user will watch  
18 the harmful video, which the algorithm interprets as signaling interest and preference. Former

19  
20 <sup>429</sup> Joan E. Solsman, *YouTube’s AI Is the Puppet Master over Most of What You Watch*, CNET  
(Jan. 20, 2018), <https://www.cnet.com/tech/services-and-software/youtube-ces-2018-neal-mohan/>

21 <sup>430</sup> Emily Vogels et al., *Teens, Social Media and Technology 2022*, Pew Rsch. Ctr. (Aug. 10,  
22 2022), <https://www.pewresearch.org/internet/2022/08/10/teens-social-media-and-technology-2022>.

23 <sup>431</sup> Mark Bergen, *YouTube Executives Ignored Warnings, Letting Toxic Videos Run Rampant*,  
Bloomberg (Apr. 2, 2019), <https://www.bloomberg.com/news/features/2019-04-02/youtube-executives-ignored-warnings-letting-toxic-videos-run-rampant>.

24 <sup>432</sup> Mark Bergen, *YouTube Executives Ignored Warnings, Letting Toxic Videos Run Rampant*,  
Bloomberg (Apr. 2, 2019), <https://www.bloomberg.com/news/features/2019-04-02/youtube-executives-ignored-warnings-letting-toxic-videos-run-rampant>.

25 <sup>433</sup> See Joan E. Solsman, *YouTube’s AI Is the Puppet Master over Most of What You Watch*,  
26 CNET (Jan. 10, 2018), <https://www.cnet.com/tech/services-and-software/youtube-ces-2018-neal-mohan/>.

27 <sup>434</sup> Josephine Bila, *YouTube’s Dark Side Could be Affecting Your Child’s Mental Health*, CNBC  
28 (Feb. 13, 2018), <https://www.cnbc.com/2018/02/13/youtube-is-causing-stress-and-sexualization-in-young-children.html>.



Google engineers told the Wall Street Journal that “[t]he algorithm doesn’t seek out extreme videos . . . but looks for clips that data show are already drawing high traffic and keeping people on the site. Those videos often tend to be sensationalist.”<sup>435</sup> An investigation by *Bloomberg* put it simply: “In the race to one billion hours, a formula emerged: Outrage equals attention.”<sup>436</sup>

575. Google’s algorithm makes it more likely for children to encounter harmful content by pushing them down “rabbit holes,” which “[lead] viewers to incrementally more extreme videos or topics, which . . . hook them in.”<sup>437</sup> For example, a user might “[w]atch clips about bicycling, and YouTube might suggest shocking bike race crashes.”<sup>438</sup> In this way, the algorithm makes it more likely that youth will encounter content that is violent, sexual, or encourages self-harm, among other types of harmful content.

576. YouTube’s “recommendation engine” creates a vicious cycle in its ruthless quest to grow view time. Users who get pushed down rabbit holes then become *models* for the algorithm. And the algorithm consequently emphasizes that harmful content, disproportionately pushing it to more users. That is, because Google designed the algorithm to “maximize engagement,” uncommonly engaged users become “models to be reproduced.”<sup>439</sup> Thus, the algorithms will “favor the content of such users,” which is often more extreme.<sup>440</sup>

577. The algorithm also makes extreme content less likely to get flagged or reported. As Guillaume Chaslot explained, the algorithm becomes “more efficient” over time “at recommending

<sup>435</sup> *Why is YouTube Suggesting Extreme and Misleading Content* (2/7/2018), <https://www.youtube.com/watch?v=7AjA3Df6i6o>; see also Josephine Bila, *YouTube’s Dark Side Could be Affecting Your Child’s Mental Health*, CNBC (Feb. 13, 2018), <https://www.cnbc.com/2018/02/13/youtube-is-causing-stress-and-sexualization-in-young-children.html>.

<sup>436</sup> Mark Bergen, *YouTube Executives Ignored Warnings, Letting Toxic Videos Run Rampant*, Bloomberg (Apr. 2, 2019), <https://www.bloomberg.com/news/features/2019-04-02/youtube-executives-ignored-warnings-letting-toxic-videos-run-rampant>.

<sup>437</sup> Max Fisher & Amanda Taub, *On YouTube’s Digital Playground, an Open Gate for Pedophiles*, NY Times (June 3, 2019), <https://www.nytimes.com/2019/06/03/world/americas/youtube-pedophiles.html>.

<sup>438</sup> Max Fisher & Amanda Taub, *On YouTube’s Digital Playground, an Open Gate for Pedophiles*, NY Times (June 3, 2019), <https://www.nytimes.com/2019/06/03/world/americas/youtube-pedophiles.html>.

<sup>439</sup> Guillaume Chaslot, *The Toxic Potential of YouTube’s Feedback Loop*, Wired (Jul. 13, 2019), <https://www.wired.com/story/the-toxic-potential-of-youtubes-feedback-loop/>.

<sup>440</sup> Guillaume Chaslot, *The Toxic Potential of YouTube’s Feedback Loop*, Wired (Jul. 13, 2019), <https://www.wired.com/story/the-toxic-potential-of-youtubes-feedback-loop/>.

1 specific user-targeted content.”<sup>441</sup> And as the algorithm improves, “it will be able to more precisely  
2 predict who is interested in [harmful or extreme] content.”<sup>442</sup> So “problems with the algorithm  
3 become exponentially harder to notice, as [harmful] content is unlikely to be flagged or  
4 reported.”<sup>443</sup>

5 578. Even on YouTube Kids, Google’s product designed for children under 13 years old,  
6 researchers from the Tech Transparency Project found that the product’s algorithm fed children  
7 content related to drugs and guns, as well as beauty and diet tips that risked creating harmful body  
8 image issues. For example, the researchers found videos speaking positively about cocaine and  
9 crystal meth; instructing users, step-by-step, how to conceal a gun; explaining how to bleach one’s  
10 face at home; and stressing the importance of burning calories.<sup>444</sup>

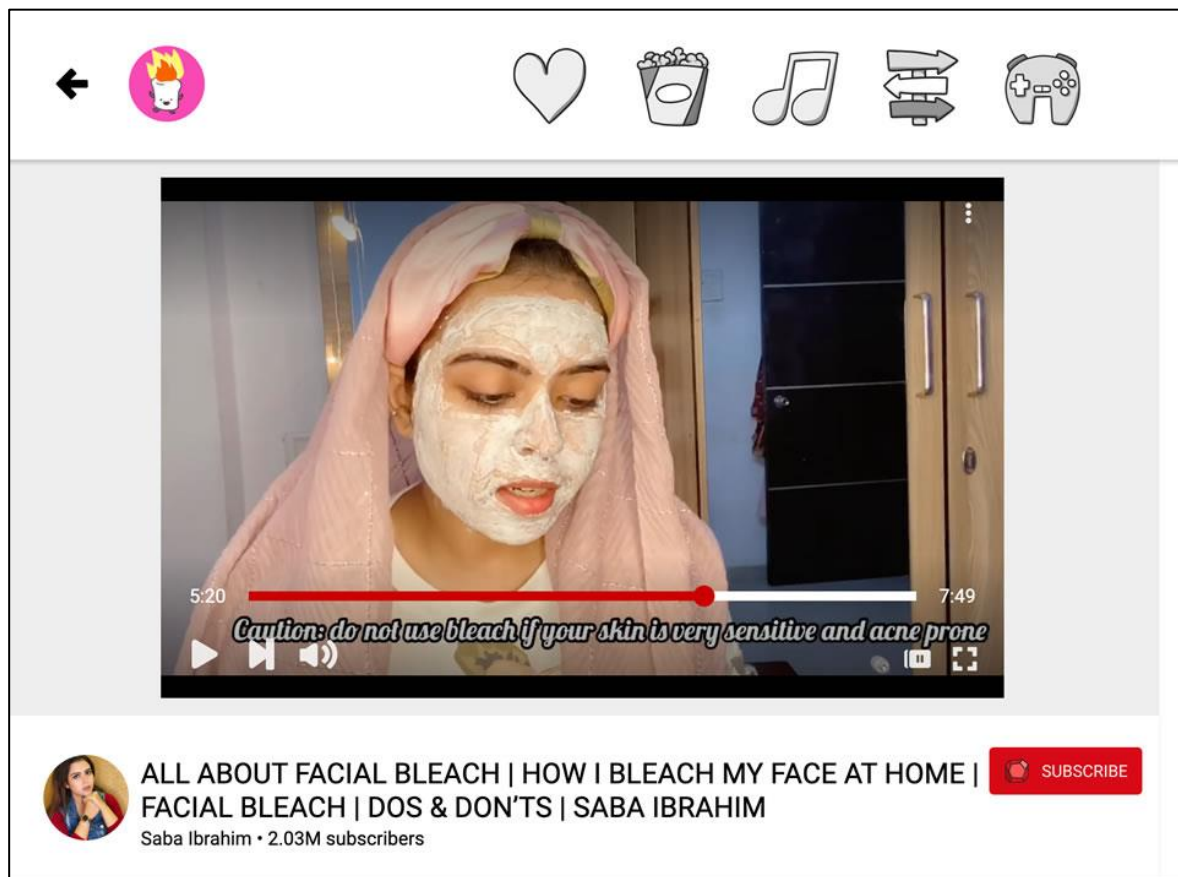
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24 <sup>441</sup> Guillaume Chaslot, *The Toxic Potential of YouTube’s Feedback Loop*, Wired (Jul. 13, 2019),  
25 <https://www.wired.com/story/the-toxic-potential-of-youtubes-feedback-loop/>.

26 <sup>442</sup> Guillaume Chaslot, *The Toxic Potential of YouTube’s Feedback Loop*, Wired (Jul. 13, 2019),  
27 <https://www.wired.com/story/the-toxic-potential-of-youtubes-feedback-loop/>.

28 <sup>443</sup> Guillaume Chaslot, *The Toxic Potential of YouTube’s Feedback Loop*, Wired (Jul. 13, 2019),  
<https://www.wired.com/story/the-toxic-potential-of-youtubes-feedback-loop/>.

<sup>444</sup> *Guns, Drugs, and Skin Bleaching: YouTube Kids Poses Risks to Children*, Tech Transparency Project (May 5, 2022), <https://www.techtransparencyproject.org/articles/guns-drugs-and-skin-bleaching-youtube-kids-still-poses-risks-children>.



579. Amy Kloer, a campaign director with the child safety group Parents Together, spent an hour on her preschool-age child's YouTube Kids account and found videos "encouraging kids how to make their shirts sexier, a video in which a little boy pranks a girl over her weight, and a video in which an animated dog pulls objects out of an unconscious animated hippo's butt."<sup>445</sup> Another parent recounted how YouTube Kids autoplay feature led her 6-year-old daughter to "an animated video that encouraged suicide."<sup>446</sup>

580. These are not isolated examples. According to Pew Research Center, 46% of parents of children 11 or younger report that children encountered videos that were inappropriate for their age.<sup>447</sup> And kids do not "choose" to encounter those inappropriate videos—YouTube's algorithm—

<sup>445</sup> Rebecca Heilweil, *YouTube's Kids App Has a Rabbit Hole Problem*, Vox (May 12, 2021), <https://www.vox.com/recode/22412232/youtube-kids-autoplay>

<sup>446</sup> Rebecca Heilweil, *YouTube's Kids App Has a Rabbit Hole Problem*, Vox (May 12, 2021), <https://www.vox.com/recode/22412232/youtube-kids-autoplay>

<sup>447</sup> Brooke Auxier et al., *Parenting Children in The Age of Screens*, Pew Rsch. Ctr. (July 28, 2020), <https://www.pewresearch.org/internet/2020/07/28/parental-views-about-youtube/>.

1 its “recommendation engine”—directs and pushes them there. Again, YouTube’s algorithm is  
 2 responsible for 70% of the time users spend using the product.<sup>448</sup>

3 581. Other reports have confirmed that YouTube’s algorithm pushes users towards  
 4 harmful conduct. In 2021, the Mozilla Foundation studied 37,000 YouTube users, finding that 71%  
 5 of all reported negative user experiences came from videos recommended to users by Google’s  
 6 algorithm.<sup>449</sup> And users were 40% more likely to report a negative experience from a video  
 7 recommended by YouTube’s algorithm than from one they searched for.<sup>450</sup> Importantly, videos  
 8 that elicited those negative experiences “acquired 70% more views per day than other videos  
 9 watched by [study] volunteers.”<sup>451</sup>

10 582. Those defects combine to compel children and teenagers to overuse a product that  
 11 feeds them harmful content, which in turn can adversely affect mental health. One 10-year-old girl  
 12 in the Mozilla Foundation study who sought “dance videos, ended up encountering videos  
 13 promoting extreme dieting.”<sup>452</sup> Her mother explained that “[s]he is now restricting her eating and  
 14 drinking.”<sup>453</sup> Another middle-schooler compulsively consumed YouTube videos every day after  
 15 she came home from school.<sup>454</sup> Eventually, she became depressed and “got the idea to overdose

16  
 17 <sup>448</sup> Joan E. Solsman, *YouTube’s AI Is the Puppet Master over Most of What You Watch*, CNET  
 18 (Jan. 20, 2018), <https://www.cnet.com/tech/services-and-software/youtube-ces-2018-neal-mohan/>.

19 <sup>449</sup> YouTube Regrets: A Crowdsourced Investigations into YouTube’s Recommendation  
 20 Algorithm, Mozilla Foundation 13 (July 2021),  
 21 <https://assets.mofoprod.net/network/documents/Mozilla YouTube Regrets Report.pdf>.

22 <sup>450</sup> YouTube Regrets: A Crowdsourced Investigations into YouTube’s Recommendation  
 23 Algorithm, Mozilla Foundation at 3 (July 2021),  
 24 <https://assets.mofoprod.net/network/documents/Mozilla YouTube Regrets Report.pdf>.

25 <sup>451</sup> YouTube Regrets: A Crowdsourced Investigations into YouTube’s Recommendation  
 26 Algorithm, Mozilla Foundation at 3 (July 2021),  
 27 <https://assets.mofoprod.net/network/documents/Mozilla YouTube Regrets Report.pdf>.

28 <sup>452</sup> YouTube Regrets: A Crowdsourced Investigations into YouTube’s Recommendation  
 Algorithm, Mozilla Foundation at 13 (July 2021),  
<https://assets.mofoprod.net/network/documents/Mozilla YouTube Regrets Report.pdf>.

<sup>453</sup> YouTube Regrets: A Crowdsourced Investigations into YouTube’s Recommendation  
 Algorithm, Mozilla Foundation at 13 (July 2021),  
<https://assets.mofoprod.net/network/documents/Mozilla YouTube Regrets Report.pdf>.

<sup>454</sup> Lesley McClurg, *After Compulsively Watching YouTube, Teenage Girl Lands in Rehab for ‘Digital Addiction’*, PBS (May 16, 2017), <https://www.pbs.org/newshour/health/compulsively-watching-youtube-teenage-girl-lands-rehab-digital-addiction>.

1 online.”<sup>455</sup> Three weeks later, she “down[ed] a bottle of Tylenol.” She landed in rehab for digital  
 2 addiction due to her compulsive YouTube watching.<sup>456</sup>

3 583. Those experiences are not unique. Mental health experts have warned that YouTube  
 4 is a growing source of anxiety and inappropriate sexual behavior among kids under 13 years old.  
 5 Natasha Daniels, a child psychotherapist, described treating children between 8 and 10 years old,  
 6 who were “found doing sexual things: oral sex, kissing and getting naked and acting out sexual  
 7 poses.”<sup>457</sup> This kind of behavior “usually indicates some sort of sexual abuse.”<sup>458</sup> Previously,  
 8 Daniels would typically “find a child who has been molested himself or that an adult has been  
 9 grooming the child from abuse.”<sup>459</sup> But “in the last five years, when I follow the trail all the way  
 10 back, it’s YouTube and that’s where it ends.”<sup>460</sup>

11 584. Daniels has also seen increased rates of anxiety among children using YouTube.  
 12 And because of that anxiety, those children “exhibit loss of appetite, sleeplessness, crying fits, and  
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18 <sup>455</sup> Lesley McClurg, *After Compulsively Watching YouTube, Teenage Girl Lands in Rehab for*  
 19 *‘Digital Addiction’*, PBS (May 16, 2017), [https://www.pbs.org/newshour/health/compulsively-](https://www.pbs.org/newshour/health/compulsively-watching-youtube-teenage-girl-lands-rehab-digital-addiction)  
 20 [watching-youtube-teenage-girl-lands-rehab-digital-addiction](https://www.pbs.org/newshour/health/compulsively-watching-youtube-teenage-girl-lands-rehab-digital-addiction).

21 <sup>456</sup> Lesley McClurg, *After Compulsively Watching YouTube, Teenage Girl Lands in Rehab for*  
 22 *‘Digital Addiction’*, PBS (May 16, 2017), [https://www.pbs.org/newshour/health/compulsively-](https://www.pbs.org/newshour/health/compulsively-watching-youtube-teenage-girl-lands-rehab-digital-addiction)  
 23 [watching-youtube-teenage-girl-lands-rehab-digital-addiction](https://www.pbs.org/newshour/health/compulsively-watching-youtube-teenage-girl-lands-rehab-digital-addiction).

24 <sup>457</sup> Josephine Bila, *YouTube’s Dark Side Could be Affecting Your Child’s Mental Health*, CNBC  
 25 (Feb. 13, 2018), [https://www.cnbc.com/2018/02/13/youtube-is-causing-stress-and-sexualization-](https://www.cnbc.com/2018/02/13/youtube-is-causing-stress-and-sexualization-in-young-children.html)  
 26 [in-young-children.html](https://www.cnbc.com/2018/02/13/youtube-is-causing-stress-and-sexualization-in-young-children.html).

27 <sup>458</sup> Josephine Bila, *YouTube’s Dark Side Could be Affecting Your Child’s Mental Health*, CNBC  
 28 (Feb. 13, 2018), [https://www.cnbc.com/2018/02/13/youtube-is-causing-stress-and-sexualization-](https://www.cnbc.com/2018/02/13/youtube-is-causing-stress-and-sexualization-in-young-children.html)  
[in-young-children.html](https://www.cnbc.com/2018/02/13/youtube-is-causing-stress-and-sexualization-in-young-children.html).

<sup>459</sup> Josephine Bila, *YouTube’s Dark Side Could be Affecting Your Child’s Mental Health*, CNBC  
 (Feb. 13, 2018), [https://www.cnbc.com/2018/02/13/youtube-is-causing-stress-and-sexualization-](https://www.cnbc.com/2018/02/13/youtube-is-causing-stress-and-sexualization-in-young-children.html)  
[in-young-children.html](https://www.cnbc.com/2018/02/13/youtube-is-causing-stress-and-sexualization-in-young-children.html).

<sup>460</sup> Josephine Bila, *YouTube’s Dark Side Could be Affecting Your Child’s Mental Health*, CNBC  
 (Feb. 13, 2018), [https://www.cnbc.com/2018/02/13/youtube-is-causing-stress-and-sexualization-](https://www.cnbc.com/2018/02/13/youtube-is-causing-stress-and-sexualization-in-young-children.html)  
[in-young-children.html](https://www.cnbc.com/2018/02/13/youtube-is-causing-stress-and-sexualization-in-young-children.html).

1 fear.”<sup>461</sup> Ultimately, she says, “YouTube is an ongoing conversation in my therapy practice, which  
2 indicates there’s a problem.”<sup>462</sup>

3 585. One study determined that using Google’s product was “consistently associated with  
4 negative sleep outcomes.”<sup>463</sup> Specifically, for every 15 minutes teens spent using YouTube, they  
5 were 24% less likely to get seven hours of sleep. According to Dr. Alon Avidan, director of the  
6 UCLA Sleep Disorders Center, YouTube is particularly sleep disruptive because its  
7 recommendation algorithm and autoplay features make it “so easy to finish one video” and watch  
8 the next.<sup>464</sup> Similarly, a signal that the YouTube algorithm relies on is the ‘time of day’ a user is  
9 watching—a signal that, when used to maximize length of duration with the YouTube product,  
10 induces sleep deprivation.<sup>465</sup>

11 586. Sleep deprivation is, in turn, associated with poor health outcomes. For example,  
12 “insufficient sleep negatively affects cognitive performance, mood, immune function,  
13 cardiovascular risk, weight, and metabolism.”<sup>466</sup>

14 587. Compulsively consuming harmful content on YouTube can also harm brain  
15 development. According to Donna Volpitta, Ed.D, “[c]hildren who repeatedly experience stressful  
16 and/or fearful emotions may under develop parts of their brain’s prefrontal cortex and frontal lobe,  
17  
18

19 <sup>461</sup> Josephine Bila, *YouTube’s Dark Side Could be Affecting Your Child’s Mental Health*, CNBC  
20 (Feb. 13, 2018), <https://www.cnbc.com/2018/02/13/youtube-is-causing-stress-and-sexualization-in-young-children.html>.

21 <sup>462</sup> Josephine Bila, *YouTube’s Dark Side Could be Affecting Your Child’s Mental Health*, CNBC  
22 (Feb. 13, 2018), <https://www.cnbc.com/2018/02/13/youtube-is-causing-stress-and-sexualization-in-young-children.html>.

23 <sup>463</sup> Meg Pillion et al., *What’s ‘app’-ning to adolescent sleep? Links between device, app use, and  
24 sleep outcomes*, 100 Sleep Med. 174–82 (Dec. 2022),  
25 <https://www.sciencedirect.com/science/article/abs/pii/S1389945722010991?via%3Dihub>.

26 <sup>464</sup> Cara Murez, *One App Is Especially Bad for Teens’ Sleep*, U.S. News & World Rep. (Sept. 13,  
27 2022), <https://www.usnews.com/news/health-news/articles/2022-09-13/one-app-is-especially-bad-for-teens-sleep>.

28 <sup>465</sup> YouTube, *How YouTube Works*, <https://www.youtube.com/howyoutubeworks/product-features/recommendations/#signals-used-to-recommend-content>.

<sup>466</sup> Jessica C. Levenson et al., *The Association Between Social Media Use and Sleep Disturbance Among Young Adults*, 85 Preventive Med. 36–41 (Apr. 2016),  
<https://www.sciencedirect.com/science/article/abs/pii/S0091743516000025>.



1 the parts of the brain responsible for executive functions, like making conscious choices and  
2 planning ahead.”<sup>467</sup>

3 588. Google’s algorithm also promotes the creation of and pushes children towards  
4 extremely dangerous prank or “challenge” videos, which often garner thousands of “Likes,” adding  
5 to the pressure children feel to participate.<sup>468</sup> For example, the YouTube algorithm repeatedly  
6 pushed 10-year-old MDL plaintiff K.L.J. to videos of a viral prank called the “I Killed Myself  
7 Prank,” in which children pretend to have committed suicide to record their loved ones’ reactions.  
8 When K.L.J. eventually participated in the prank and tried to pretend to hang himself, he  
9 accidentally did hang himself, suffering brain damage as a result. The neurological and  
10 psychological techniques by which Google, like other Defendants, fosters excessive, addictive use  
11 of YouTube in turn foster watching “challenge” videos.

12 589. Even though Google knew or should have known of these risks to its youth users,  
13 Google’s product lacks any warnings that foreseeable product use could cause these harms.

14 590. And despite all the evidence that YouTube’s design and algorithms harm millions  
15 of children, Google continues to manipulate users and compel them to use the product excessively,  
16 to enhance Google’s bottom line. As a result, young people are confronted with more and more  
17 extreme videos, often resulting in significant harm.

18 **d. YouTube’s defective features include impediments to**  
19 **discontinuing use.**

20 591. As with other Defendants, Google has intentionally and defectively designed its  
21 products so that adolescent users face significant navigational obstacles and hurdles when trying to  
22 delete or deactivate their accounts, in contrast to the ease with which users can create those  
23 accounts.

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26 <sup>467</sup> Josephine Bila, *YouTube’s Dark Side Could be Affecting Your Child’s Mental Health*, CNBC  
27 (Feb. 13, 2018), <https://www.cnbc.com/2018/02/13/youtube-is-causing-stress-and-sexualization-in-young-children.html>.

28 <sup>468</sup> See, e.g., ViralBrothers, *Revenge 9 – Cheating Prank Turns into Suicide Prank*, YouTube  
(June 11, 2014), [https://www.youtube.com/watch?v=Bf7xIjz\\_wv0](https://www.youtube.com/watch?v=Bf7xIjz_wv0).

1           592. *First*, because YouTube is accessible without a user needing to log in, YouTube  
2 users cannot prevent themselves from being able to access YouTube by deleting their YouTube  
3 account.

4           593. *Second*, YouTube accounts are linked to a user's broader Google account. These  
5 accounts are structured such that, for a user to delete a YouTube account, the user must also delete  
6 the user's entire Google account. This means that if a YouTube user uses Google's other products  
7 those accounts will be lost as well. This structure holds hostage user data—if a child needs to keep  
8 their email account through Google (for instance, if that is a requirement of their school), they  
9 cannot delete their YouTube account, even if they want to. If a user stores family photos in Google  
10 Photos, but wants to delete their YouTube account, they must choose between storage for their  
11 photos or deleting their YouTube account. Similarly, if a user has purchased books or movies  
12 through Google's digital market Google Play, the user's copy of those books or movies will be  
13 deleted if the user deletes their Google account to rid themselves of YouTube. Google explicitly  
14 threatens users with this consequence on the page where users can delete their account, listing every  
15 associated account Google will delete and providing examples of the kinds of content that will be  
16 deleted if a user does not back down from their desire to delete their YouTube account.

17           594. *Third*, Google intentionally designed its product so that to delete a user's Google  
18 account, a user must locate and tap on six different buttons (through six different pages and popups)  
19 from YouTube's main feed to delete an account successfully. This requires navigating away from  
20 YouTube and into the webpages of other Google products. As with Meta, users are still able to  
21 recover their accounts after deletion—though unlike Meta, Google does not tell users when their  
22 accounts will become unrecoverable, simply threatening that they will soon after deletion.

23           **4. Google facilitates the spread of CSAM and child exploitation.**

24           595. Various design features of YouTube promote and dramatically exacerbate sexual  
25 exploitation, the spread of CSAM, sextortion, and other socially maladaptive behavior that harms  
26 children.

27           596. Google is required to comply with COPPA and obtain verifiable parental consent  
28 before collecting personal information from children. It fails to do so. In 2019, the FTC and New

1 York Attorney General alleged in a federal complaint that Google and YouTube violated COPPA  
2 by collecting personal information from children without verifiable parental consent.<sup>469</sup>

3 597. Google and YouTube collected persistent identifiers that they used to track viewers  
4 of child-directed channels across the Internet without prior parental notification, in violation of  
5 Sections 1303(c), 1305(a)(1), and 1306(d) of COPPA.<sup>470</sup>

6 598. Google and YouTube designed the child-centered YouTube Kids product. Despite  
7 its clear knowledge of this channel being directed to children under 13 years old, Google served  
8 targeted advertisements on these channels.<sup>471</sup>

9 599. Google pays its users to create content because it benefits from increased user  
10 activity and receives something of value for its YouTube Partner Program.<sup>472</sup>

11 600. Google allows users to monetize its product to generate revenue for itself and its  
12 users, including users that violate laws prohibiting the sexual exploitation of children.

13 601. According to its own guidelines, Google prohibits using its social media product in  
14 ways that “[endanger] the emotional and physical well-being of minors.”<sup>473</sup>

15 602. Google represents that YouTube “has strict policies and robust operations in place  
16 to tackle content and behavior that is harmful or exploitative to children.”<sup>474</sup>

17  
18  
19 <sup>469</sup> Fed. Trade Comm’n, Google and YouTube Will Pay Record \$170 Million for Alleged  
20 Violations of Children’s Privacy Law (2022), <https://www.ftc.gov/news-events/news/press-releases/2019/09/google-youtube-will-pay-record-170-million-alleged-violations-childrens-privacy-law>.

21 <sup>470</sup> Fed. Trade Comm’n, Google and YouTube Will Pay Record \$170 Million for Alleged  
22 Violations of Children’s Privacy Law (2022), <https://www.ftc.gov/news-events/news/press-releases/2019/09/google-youtube-will-pay-record-170-million-alleged-violations-childrens-privacy-law>.

23 <sup>471</sup> Fed. Trade Comm’n, Google and YouTube Will Pay Record \$170 Million for Alleged  
24 Violations of Children’s Privacy Law (2022), <https://www.ftc.gov/news-events/news/press-releases/2019/09/google-youtube-will-pay-record-170-million-alleged-violations-childrens-privacy-law>.

25 <sup>472</sup> YouTube Partner Program overview & eligibility,  
26 <https://support.google.com/youtube/answer/72851?hl=en>.

27 <sup>473</sup> Child safety policy - YouTube help, Google,  
<https://support.google.com/youtube/answer/2801999?hl=en>.

28 <sup>474</sup> Child safety policy - YouTube help, Google,  
<https://support.google.com/youtube/answer/2801999?hl=en>.

603. Google maintains that its guidelines prohibit images, videos, and comments that put children at risk, “including areas such as unwanted sexualization, abuse, and harmful and dangerous acts.”<sup>475</sup>

604. While Google “may place an age restriction on the video,”<sup>476</sup> its product fails to implement proper age-verification mechanisms to prevent minor users from accessing age-restricted content, as discussed above.

605. Google fails to prevent collages of images and videos of children showing their exposed buttocks, underwear, and genitals from racking up millions of views, on its product which are then promoted and monetized by displaying advertisements from major brands alongside the content.<sup>477</sup>

606. Through Google’s product, videos of minors revealing their “bathing suit hauls,” playing in pools, beaches, waterparks, or performing gymnastics are recommended, shown, and promoted to child predators who interact with these videos, including commenting to share “time codes for crotch shots,” to direct others to similar videos, and to arrange to meet up on other social media products to share and exchange CSAM.<sup>478</sup>

607. Multiple YouTube channels dedicated to pre-teen models, young girls stretching, and teen beauty are routinely oversexualized and manipulated by predators.<sup>479</sup>

608. Google’s product recommends and promotes abusive behaviors towards children and victimizes unsuspecting minors on a mass scale.

609. When users search for images and videos of minors, Google’s algorithm pushes additional videos, which strictly feature children, and this recommended content often includes promoted content for which Google receives value from advertisers.

<sup>475</sup> Child safety policy - YouTube help, Google, <https://support.google.com/youtube/answer/2801999?hl=en>.

<sup>476</sup> Child safety policy - YouTube help, Google, <https://support.google.com/youtube/answer/2801999?hl=en>.

<sup>477</sup> K.G Orphanides, *On YouTube, a network of pedophiles is hiding in plain sight* WIRED UK (2019), <https://www.wired.co.uk/article/youtube-pedophile-videos-advertising>.

<sup>478</sup> K.G Orphanides, *On YouTube, a network of pedophiles is hiding in plain sight* WIRED UK (2019), <https://www.wired.co.uk/article/youtube-pedophile-videos-advertising>.

<sup>479</sup> K.G Orphanides, *On YouTube, a network of pedophiles is hiding in plain sight* WIRED UK (2019), <https://www.wired.co.uk/article/youtube-pedophile-videos-advertising>.

1 610. Users of Google's product who search for images and videos of minors are further  
 2 inundated with comments from other predators that provide hyperlinks to CSAM and opportunities  
 3 to share CSAM on other products.<sup>480</sup>

4 611. On average, Google pays its creators \$0.50 to \$6.00 per 1,000 views of any video  
 5 they create, including materials depicting minors in violation of 18 U.S.C. §§ 2252, 2252A, 1591,  
 6 1466, and other criminal statutes.<sup>481</sup>

7 612. Google actively participates and receives value for creating content on its product  
 8 in violation of 18 U.S.C. §§ 2252, 2252A, 1591, 1466, and other criminal statutes.

9 613. Google actively participates and receives value for creating content on its product  
 10 in violation of laws prohibiting the sexual exploitation of children.

11 614. Google maintains that it is "dedicated to stopping the spread of online child  
 12 exploitation videos."<sup>482</sup> Yet, it fails to implement proper safeguards to prevent the spread of illegal  
 13 contraband on its product.

14 615. The troves of data and information about its users that Google collects enable it to  
 15 detect, report as legally required, and take actions to prevent instances of sexual grooming,  
 16 sextortion, and CSAM distribution, but it has failed to do so. Google continues to make false  
 17 representations its "teams work around-the-clock to identify, remove, and report this content."<sup>483</sup>

18 616. Google has proprietary technology, CSAI Match, that is supposed to combat CSAI  
 19 (Child Sexual Abuse Imagery) content online. This technology allows Google to identify known  
 20 CSAM contraband being promoted, shared, and downloaded on the YouTube product. Google's  
 21 CSAI Match can identify which portion of the video matches known and previously hashed CSAM  
 22 and provide a standardized categorization of the CSAM. When a match is detected by Google using  
 23

24 <sup>480</sup> K.G Orphanides, On YouTube, a network of pedophiles is hiding in plain sight WIRED UK  
 (2019), <https://www.wired.co.uk/article/youtube-pedophile-videos-advertising>.

25 <sup>481</sup> How YouTube creators earn money - how YouTube works, YouTube,  
 26 <https://www.youtube.com/howyoutubeworks/product-features/monetization/#:~:text=Advertising%20is%20the%20primary%20way,directly%20profit%20from%20their%20work>.

27 <sup>482</sup> YouTube, <https://www.youtube.com/csai-match/>.

28 <sup>483</sup> Google's efforts to combat online child sexual abuse material,  
<https://transparencyreport.google.com/child-sexual-abuse-material/reporting>.

1 CSAM Match, it is flagged so that Google can “responsibly report in accordance to local laws and  
2 regulations.”<sup>484</sup>

3 617. Despite this, Google routinely fails to flag CSAM and regularly fails to adequately  
4 report known content to NCMEC and law enforcement and fails to takedown, remove, and  
5 demonetize CSAM.

6 618. Separate from CSAM detection, Google also implements an automated system  
7 called Content ID “to easily identify and manage [its] copyright-protected content on YouTube.”<sup>485</sup>  
8 Videos uploaded to YouTube are “scanned against a database of audio and visual content that’s  
9 been submitted to YouTube by copyright owners,” and Google can block, monetize, and track that  
10 material automatically.<sup>486</sup> Google only grants Content ID to copyright owners who meet its own  
11 specific criteria, and these criteria categorically exclude CSAM victims. Google fails to use Content  
12 ID systems to block, remove, demonetize, or report CSAM on its product.

13 619. In 2018, Google launched “cutting-edge artificial intelligence (AI) that significantly  
14 advances [Google’s] existing technologies,” which Google claimed “drastically improved”  
15 detection of CSAM that is distributed by its YouTube product.<sup>487</sup> These claims were false, and  
16 misled parents and children into believing its product is safe for minors. Google failed to drastically  
17 improve the frequency of CSAM detection, reports, and takedowns on its product.

18 620. Google claims that it will “continue to invest in technology and organizations to  
19 help fight the perpetrators of CSAM and to keep our products and our users safe from this type of  
20 abhorrent content.”<sup>488</sup> In reality, it fails to do so. Google fails to invest in adequate age verification  
21 and continues to fail to remove CSAM from its product.

22 <sup>484</sup> Google’s efforts to combat online child sexual abuse material,  
23 <https://transparencyreport.google.com/child-sexual-abuse-material/reporting>.

24 <sup>485</sup> How Content ID Works – YouTube Help, Google,  
25 <https://support.google.com/youtube/answer/2797370?hl=en>.

26 <sup>486</sup> How Content ID Works – YouTube Help, Google,  
27 <https://support.google.com/youtube/answer/2797370?hl=en>.

28 <sup>487</sup> Nikola Todorovic, *Using AI to help organizations detect and report Child sexual abuse material online* Google (2018), <https://blog.google/around-the-globe/google-europe/using-ai-help-organizations-detect-and-report-child-sexual-abuse-material-online/>.

<sup>488</sup> Nikola Todorovic, *Using AI to help organizations detect and report Child sexual abuse material online* Google (2018), <https://blog.google/around-the-globe/google-europe/using-ai-help-organizations-detect-and-report-child-sexual-abuse-material-online/>.



621. Google knows or should have known that YouTube facilitates the production, possession, distribution, receipt, transportation, and dissemination of millions of materials that depict obscene visual representations of the sexual abuse of children, or that violate child pornography laws, each year.

622. Google knowingly fails to take adequate and readily available measures to remove these contraband materials from its product in a timely fashion.

623. In violation of 18 U.S.C. § 2258A, Google knowingly fails to report massive amounts of material in violation of 18 U.S.C. § 2256 and 18 U.S.C. § 1466A.

624. YouTube is polluted with illegal material that promotes and facilitates the sexual exploitation of minors, and Google receives value in the form of increased user activity for the dissemination of these materials on its products.

625. Google failed to report materials in violation of the reporting requirements of 18 U.S.C. § 2258A.<sup>489</sup>

626. Google knows that its product is unsafe for children and yet fails to implement safeguards to prevent children from accessing its product.

627. Further, there is effectively no way for users to report CSAM on Google's YouTube product. YouTube does not allow users to specifically report any material posted on its product as CSAM or child pornography.<sup>490</sup>

628. YouTube Mobile does not provide any way to report users, including users who share CSAM on its product. On the desktop, a viewer can report a user, but Google has made the reporting function difficult to access. Furthermore, reporting requires a viewer to have a Google account and be logged in to the account to make the report.<sup>491</sup>

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<sup>489</sup> NCMEC, 2019 CyberTipline reports by Electronic Service Providers (ESP), <https://www.missingkids.org/content/dam/missingkids/pdfs/2019-reports-by-esp.pdf>.

<sup>490</sup> Canadian Centre for Child Protection, Reviewing Child Sexual Abuse Material Reporting Functions on Popular Platforms, [https://protectchildren.ca/pdfs/C3P\\_ReviewingCSAMMaterialReporting\\_en.pdf](https://protectchildren.ca/pdfs/C3P_ReviewingCSAMMaterialReporting_en.pdf).

<sup>491</sup> Canadian Centre for Child Protection, Reviewing Child Sexual Abuse Material Reporting Functions on Popular Platforms, at 18 [https://protectchildren.ca/pdfs/C3P\\_ReviewingCSAMMaterialReporting\\_en.pdf](https://protectchildren.ca/pdfs/C3P_ReviewingCSAMMaterialReporting_en.pdf).

1                   5.     **Google failed to adequately warn about the harm its products cause or**  
2                   **provide instructions regarding safe use.**

3           629.     Since YouTube's inception, Google has failed to adequately warn adolescent users  
4     about the physical and mental health risks its product poses. These risks include, but are not limited  
5     to, product abuse, addiction, and compulsive use; sexual exploitation from adult users; dissociative  
6     behavior; damage to body image; social isolation; impaired brain development; and a plethora of  
7     mental health disorders like body dysmorphia, eating disorders, anxiety, depression, insomnia,  
8     ADD/ADHD exacerbation, suicidal ideation, self-harm, and death.

9           630.     Google targets adolescent users via advertising and marketing materials distributed  
10    throughout digital and traditional media products. Its advertising and marketing campaigns fail to  
11    provide adequate warnings to potential adolescent consumers of the physical and mental risks  
12    associated with using YouTube.

13          631.     Google further fails to adequately warn adolescents during the product registration  
14    process. At account setup, Google's product contains no warning labels, banners, or conspicuous  
15    messaging to adequately inform adolescent users of the known risks and potential physical and  
16    mental harms associated with usage of its product. Instead, Google allows adolescents to easily  
17    create an account (or multiple accounts), and to access YouTube with or without an account.

18          632.     Google's lack of adequate warnings continues once an adolescent uses YouTube.  
19    Google does not adequately inform adolescent users that their data will be tracked, used to help  
20    build a unique algorithmic profile, and potentially sold to Google's advertising clients.

21          633.     Google's failure to warn adolescent users continues even as adolescents exhibit  
22    problematic signs of addictive, compulsive use of YouTube. Google does not adequately warn users  
23    when their screen time reaches harmful levels or when adolescents are accessing the product on a  
24    habitual and uncontrolled basis.

25          634.     Not only does Google fail to adequately warn users regarding the risks associated  
26    with YouTube, it also does not provide adequate instructions on how adolescents can safely use its  
27    product. A reasonable and responsible company would instruct adolescents on best practices and  
28    safety protocols when using a product known to pose health risks.

635. Google also fails to adequately warn users that:

- a. sexual predators use YouTube to produce and distribute CSAM;
- b. adult predators targeting young children for sexual exploitation, sextortion, and CSAM are prevalent on YouTube;
- c. usage of YouTube can increase the risk of children being targeted and sexually exploited by adult predators; and,
- d. usage of YouTube can increase risky and uninhibited behavior in children, making them easier targets to adult predators for sexual exploitation, sextortion, and CSAM.

**G. IMPACT OF THE DEFENDANT-CREATED MENTAL HEALTH CRISIS ON PLAINTIFF**

636. Plaintiff operates Howard County Public Schools, a school district that serves approximately 58,000 students in Pre-Kindergarten through Twelfth Grade across 77 schools and centers. HCPSS' mission is to ensure academic success and social-emotional well-being for each student in an inclusive and nurturing environment that closes opportunity gaps. HCPSS is ensuring students are developing 21st century competencies and enabling each student's unique brilliance to flourish in order to build empowered communities and a more inclusive and just world. Howard County Public School System is located in Howard County, Maryland, with a population of approximately 335,000 residents.

637. Defendants' conduct has created a public health crisis in Plaintiff's schools, and Plaintiff has spent significant and unexpected levels of time and resources on addressing the pervasiveness of social media addiction and its sequelae.

638. There has been a surge in the proportion of youth in Plaintiff's community who say they cannot stop or control their anxiety, who feel so sad and hopeless that they stop doing the activities that they used to love, who are considering suicide, who made plans to commit suicide, and who have attempted to commit suicide. In 2013, 14.1 percent of high school-aged children in

Howard County reported seriously considering attempting suicide.<sup>492</sup> That number grew to 16.5 percent in 2018<sup>493</sup> and grew again in 2021 to 20.3 percent.<sup>494</sup>

639. The increases in anxiety, depression, and suicidal behavior among Plaintiff's students have contributed to students' increased behavioral problems in Plaintiff's schools. In recent years, an increasing number of students in Plaintiff's schools have been reported or disciplined for disruptive conduct.

640. Much of the disruptive conduct in Plaintiff's schools occurs on or is related to Defendants' platforms. A common pattern of disruptive conduct at Plaintiff's schools is that students will film or photograph other students without their permission and post videos or photos on Defendants' platforms. As a result, students cannot concentrate on schoolwork because of distraction from addiction to the platforms, and from anxiety from being bullied and harassed online. As a result, administrators and teachers cannot focus on educating. Rather, they spend more and more time investigating and resolving disciplinary issues tied to Defendants' platforms, and fielding complaints from students and parents alike.

641. The increase in students who report suffering from anxiety and depression and the increase in behavioral issues—and the connection to Defendants' platforms—have not gone unnoticed. Howard County Public Schools counselors estimate that a significant percent of student counseling is related to social media. The common themes of these counseling sessions are that students feel unable to manage their time and unable to control their impulse to use social media, and they express fear and anxiety about what other students post about them on social media.

642. In addition to increased disciplinary incidents and counseling related to students' compulsive use of Defendants' social media products, Plaintiff also faces attendance challenges.

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<sup>492</sup> 2013 Maryland YRBS, *available at* <https://health.maryland.gov/phpa/ccdpc/Reports/Documents/2013%20YRBS%20Reports/2013-YRBS-Howard-HS-Summary-Tables.pdf>.

<sup>493</sup> 2018 Maryland YRBS, *available at* <https://health.maryland.gov/phpa/ccdpc/Reports/Documents/2018%20YRBS%20YTS%20Reports/Howard/2018MDHS15%20Summary%20Tables.pdf>.

<sup>494</sup> 2021 Maryland YRBS, *available at* <https://health.maryland.gov/phpa/ccdpc/Reports/Documents/2021%20YRBS%20YTS%20Reports/2021-22%20YRBS-YTS%20Howard/2021-22%20High%20School/2021MDHS15%20Summary%20Tables.pdf>.

1           643. Plaintiff has observed a marked increase in the number of students acting out and in  
2 need of mental health services, caused in substantial part by Defendants' products exploiting the  
3 brains of young users.

4           644. In an attempt to address this decline in students' mental, emotional, and social  
5 health, Plaintiff has been forced to divert resources and expend additional resources to:

- 6           a. hire additional personnel, including counselors and medical professionals to
- 7           address mental, emotional, and social health issues;
- 8           b. develop additional resources to address mental, emotional, and social health
- 9           issues;
- 10          c. increase training for teachers and staff to identify students exhibiting mental
- 11          emotional, and social distress;
- 12          d. educate teachers, staff, and members of the community about the harms
- 13          caused by Defendants' wrongful conduct;
- 14          e. develop lesson plans to teach students about the dangers of using
- 15          Defendants' platforms;
- 16          f. update its student handbook to address use of Defendants' platforms; and
- 17          g. update school policies to address use of Defendants' platforms

18          645. Additionally, more students have been involved in disciplinary incidents as a result  
19 of the decline in students' mental, emotional, and social health caused by Defendants. As a result,  
20 Plaintiff has been forced to divert resources and expend additional resources to:

- 21          a. repair property damaged as a result of the exploitation of students by
- 22          Defendants' platforms;
- 23          b. increase disciplinary services and time spent addressing bullying,
- 24          harassment, and threats;
- 25          c. meet with students and the parents of students caught using Defendants'
- 26          platforms at school;
- 27          d. divert time and resources from instruction activities to notify parents and
- 28          guardians of students' behavioral issues and attendance; and

e. investigate and respond to threats made against schools and students over social media.

646. During the last decade, Plaintiff has had to increase the number of mental health professionals it employs across the district. Many students rely on these mental health professionals as their only form of mental healthcare. Yet Plaintiff's school psychologists and counselors cannot possibly keep up with the increased need for mental health services resulting from students' use of Defendants' platforms.<sup>495</sup> HCPSS is committed to all students and families having access to social-emotional, behavioral and mental health interventions to support student achievement and well-being. HCPSS, over the past several years, has hired school social workers to further address the increased need for student mental health services. School social workers advocate for, support, and empower students, schools, families and communities to remove social, systemic and mental health barriers that impact student well-being to ensure a safe and supportive learning environment.

647. As a result, the rest of Plaintiff's staff must fill in the gaps to help students with mental health concerns. While this is admirable, teachers and other support staff cannot replace certified counselors.

648. The funding needed to address these harms should not fall to the public. Rather, Defendants should bear the burden of remedying their wrongs.

649. Ultimately, Plaintiff requires significantly greater and longer-term funding to address the nuisance Defendants have created, along with abatement and injunctive relief.

## **V. PLAINTIFF'S CLAIMS.**

### **COUNT 1: Public Nuisance**

650. Plaintiff realleges and incorporate by reference each preceding and succeeding paragraph as though set forth fully at length herein.

651. Plaintiff brings this claim under Maryland public nuisance law as to all Defendants.

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<sup>495</sup> For example, FY23 = 172.5 counselors, 83.2 school psychologists, 9 social workers funded from Operating (total = 264.7). FY18 it was 156.5 counselors, 67.7 school psychologists, 0 social worker (total= 224.2).



1           652. Maryland courts have adopted the Restatement (Second) of Torts' definition of  
2 public nuisance, under which a public nuisance is something that unreasonably interferes with a  
3 general public right, such as the public health, safety, or peace.<sup>496</sup>

4           653. Defendants have created a mental health crisis in Plaintiff's schools, unreasonably  
5 interfering with the public health and safety in Plaintiff's community and interfering with the  
6 operations and learning environment of Howard County Public Schools.

7           654. Plaintiff and its students have a right to be free from conduct that endangers their  
8 health, safety, and welfare. Yet Defendants have engaged in conduct which unreasonably and  
9 substantially interferes with the public health and safety in Plaintiff's community by designing,  
10 marketing, and operating their respective social media platforms for use by students in the

11           655. Howard County Public Schools, in a manner that substantially interferes with the  
12 functions and operations of Plaintiff's schools and with the public health, safety, and welfare of  
13 Plaintiff's community.

14           656. Each Defendant has created or assisted in the creation of a condition that is injurious  
15 to the health, safety, and welfare of Plaintiff's community.

16           657. The health and safety of the students and employees of Howard County Public  
17 Schools, including those who use, have used, or will use Defendants' platforms, as well as those  
18 affected by others' use of their platforms, are matters of substantial public interest and of legitimate  
19 concern to Plaintiff.

20           658. Defendants' conduct has affected and continues to affect a substantial number of  
21 people within Howard County Public Schools and is likely to continue causing significant harm.

22           659. Defendants' conduct has directly caused a severe disruption of the public health,  
23 order, and safety. Defendants' conduct is ongoing and continues to produce permanent and long  
24 lasting damage.

25           660. This harm to youth mental health and the corresponding impacts on the public  
26 health, safety, and welfare of Plaintiff's community outweighs any social utility of Defendants'  
27 wrongful conduct.

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<sup>496</sup> *Tadger v. Montgomery Cty.*, 300 Md. 539, 552 (Md. 1984).

1           661. The rights, interests, and inconvenience to Plaintiff's community far outweighs the  
2 rights, interests, and inconvenience to Defendants, who have profited tremendously from their  
3 wrongful conduct.

4           662. But for Defendants' actions, Plaintiff's students would not use social media  
5 platforms as frequently or continuously as they do today or be deluged with exploitive and harmful  
6 content to the same degree, and the public health crisis that currently exists as a result of  
7 Defendants' conduct would have been averted.

8           663. Logic, common sense, justice, policy, and precedent indicate Defendants' unfair and  
9 deceptive conduct has caused the damage and harm complained of herein. Defendants knew or  
10 reasonably should have known that their design, promotion, and operation of their platforms would  
11 cause students to use their platforms excessively, that their marketing methods were designed to  
12 appeal to youth, and that their active efforts to increase youth use of their platforms were causing  
13 harm to youth and to schools, including youth in Plaintiff's schools.

14           664. Thus, the public nuisance caused by Defendants was reasonably foreseeable,  
15 including the financial and economic losses incurred by Plaintiff.

16           665. Additionally, Defendants' conduct was a substantial factor in bringing about the  
17 public nuisance. By designing, marketing, promoting, and operating their platforms in a manner  
18 intended to maximize the time youth spend on their respective platforms—despite knowledge of  
19 the harms to children and teens from their wrongful conduct—Defendants directly facilitated the  
20 widespread, excessive, and habitual use of their platforms and the public nuisance effecting  
21 Plaintiff's schools. By seeking to capitalize on their success by refining their platforms to increase  
22 the time youth spend on their platforms, Defendants directly contributed to the public health crisis  
23 and the public nuisance affecting Plaintiff's schools.

24           666. Defendants' conduct is especially injurious to Plaintiff because, as a direct and  
25 proximate cause of Defendants' conduct creating or assisting in the creation of a public nuisance,  
26 Plaintiff and its students and employees have sustained and will continue to sustain substantial  
27 injuries.

1           667. Plaintiff has had to take steps to mitigate the harm and disruption caused by  
2 Defendants' conduct, including the following:

- 3           a. hiring additional personnel to address mental, emotional, and social health  
4 issues;
  - 5           b. developing additional resources to address mental, emotional, and social  
6 health issues;
  - 7           c. increasing training for teachers and staff to identify students exhibiting  
8 symptoms affecting their mental, emotional, and social health;
  - 9           d. training teachers, staff, and members of the community about the harms  
10 caused by Defendants' wrongful conduct;
  - 11           e. developing lesson plans to teach students about the dangers of using  
12 Defendants' platforms;
  - 13           f. investing resources in educating students about the dangers of using  
14 Defendants' platforms;
  - 15           g. addressing property damaged as a result of students acting out because of  
16 mental, social, and emotional problems caused by Defendants;
  - 17           h. increasing disciplinary services and time spent addressing bullying,  
18 harassment, and threats;
  - 19           i. meeting with students and the parents of students caught using Defendants'  
20 platforms at school or other disciplinary matters related to students' use of  
21 Defendants' platforms;
  - 22           j. diverting time and resources from instruction activities to notify parents and  
23 guardians of students' behavioral issues and attendance;
  - 24           k. investigating and responding to threats made against Plaintiff's schools and  
25 students over social media;
  - 26           l. updating its student handbook to address use of Defendants' platforms; and  
27           m. updating school policies to address use of Defendants' platforms.
- 28

1           668. As detailed herein, Plaintiff has suffered special damage different in kind or quality  
2 from that suffered by the public in common. The damages suffered by Plaintiff have been greater  
3 in degree and different in kind than those suffered by the general public including, but not limited  
4 to, costs arising from: expending, diverting and increasing personnel to provide mental health  
5 services; expending, diverting and increasing resources to address mental health issues; expending,  
6 diverting and increasing staff time to confiscate cell phones and other devices; expending, diverting  
7 and increasing staff time to communicate and engage with parents; expending, diverting and  
8 increasing staff time associated with student discipline; expending, diverting and increasing staff  
9 time associated with routing students to school psychologists and counselors; expending, diverting  
10 and increasing staff time to train staff to identify students exhibiting symptoms affecting their  
11 mental health; expending, diverting and increasing resources for modifications to mental health  
12 curriculum; expending, diverting and increasing resources to repair property damages as a result of  
13 the exploitive and harmful content Defendants directed to students; and expending, diverting and  
14 increasing resources to investigate and respond to threats made against schools and students over  
15 social media.

16           669. As a result of Defendant's conduct, Plaintiff has incurred and continues to incur  
17 damages and is entitled to compensation therefor. Plaintiff requests all the relief to which it is  
18 entitled in its own right and relating to the special damage or injury it has suffered, and not in any  
19 representative or *parens patriae* capacity on behalf of students, including actual and compensatory  
20 damages in an amount to be determined at trial and an order providing for the abatement of the  
21 public nuisance that Defendants have created or assisted in the creation of, and enjoining  
22 Defendants from future conduct contributing to the public nuisance described above.

23           670. Defendants are jointly and severally liable because they have acted in concert with  
24 each other and because Plaintiff is not at fault.

25           671. Defendants' conduct, as described above, was intended to serve their own interests  
26 despite having reason to know and consciously disregarding a substantial risk that their conduct  
27 might significantly injure the rights of others, including Plaintiff, and/or Defendants consciously  
28 pursued a course of conduct knowing that it created a substantial risk of significant harm to others,

1 including Plaintiff. Defendants regularly risk the health of users of their platforms with full  
 2 knowledge of the dangers of their platforms. Defendants consciously decided not to redesign, warn,  
 3 or inform the unsuspecting public, including Plaintiff's students or Plaintiff. Defendants' reckless  
 4 and outrageous indifference to a highly unreasonable risk of harm and conscious indifference to  
 5 the health, safety, and welfare of others warrants an award of punitive damages.

6 **COUNT 2:**  
 7 **Negligence**

8 672. Plaintiff incorporates by reference all preceding paragraphs.

9 673. Defendants owed Plaintiff a duty to not expose Plaintiff to an unreasonable risk of  
 10 harm, and to act with reasonable care as a reasonably careful person and/or company would act  
 11 under the circumstances.

12 674. At all times relevant to this litigation, Defendants owed a duty to its users and  
 13 Plaintiff to exercise reasonable care in the design, research, development, testing, marketing,  
 14 supply, promotion, advertisement, operation, and distribution of their social media products,  
 15 including the duty to take all reasonable steps necessary to design, research, market, advertise,  
 16 promote, operate, and/or distribute their platforms in a way that is not unreasonably dangerous to  
 17 users, including children.

18 675. At all times relevant to this litigation, Defendants owed a duty to users and Plaintiff,  
 19 to exercise reasonable care in the design, research, development, testing, marketing, supply,  
 20 promotion, advertisement, operation, and distribution of their social media platforms, including the  
 21 duty to provide accurate, true, and correct information about the risks of using Defendants'  
 22 platforms; and appropriate, complete, and accurate warnings about the potential adverse effects of  
 23 extended social media use, in particular, social media content Defendants directed via their  
 24 algorithms to users.

25 676. At all times relevant to this litigation, Defendants knew or, in the exercise of  
 26 reasonable care, should have known of the hazards and dangers of their respective social media  
 27 platforms and specifically, the health hazards their platforms posed to youth in particular, especially  
 28 extended or problematic use of such platforms.

1           677. Accordingly, at all times relevant to this litigation, Defendants knew or, in the  
2 exercise of reasonable care, should have known that use of Defendants' social media platforms by  
3 youth could cause Plaintiff's injuries and thus created a dangerous and unreasonable risk of injury  
4 to Plaintiff.

5           678. Defendants also knew or, in the exercise of reasonable care, should have known that  
6 users of Defendants' social media platforms were unaware of the risks and the magnitude of the  
7 risks associated with the use of Defendants' platforms including but not limited to the risks of  
8 extended or problematic social media use and the likelihood that algorithm-based recommendations  
9 would expose child and adolescent users to content that is violent, sexual, or encourages self-harm,  
10 among other types of harmful content.

11           679. As such, Defendants, by action and inaction, representation and omission, breached  
12 their duty of reasonable care, failed to exercise ordinary care, and failed to act as a reasonably  
13 careful person and/or company would act under the circumstances in the design, research,  
14 development, testing, marketing, supply, promotion, advertisement, operation, and distribution of  
15 their social media platforms, in that Defendants designed, researched, developed, tested, marketed,  
16 supplied, promoted, advertised, operated, and distributed social media platforms that Defendants  
17 knew or had reason to know would negatively impact the mental health of users, particularly youth,  
18 and failed to prevent or adequately warn of these risks and injuries.

19           680. Despite their ability and means to investigate, study, and test their social media  
20 platforms and to provide adequate warnings, Defendants have failed to do so. Defendants have  
21 wrongfully concealed information and have made false and/or misleading statements concerning  
22 the safety and use of Defendants' social media platforms. Defendants breached their duty of care  
23 by:

- 24           a. designing, researching, developing, marketing, supplying, promoting,  
25 advertising, operating, and distributing their social media platforms without  
26 thorough and testing;
- 27           b. failing to sufficiently study and conduct necessary tests to determine whether  
28 or not their social media platforms were safe for youth users;



- c. failing to use reasonable and prudent care in the research, design, development, testing, marketing, supply, promotion, advertisement, operation, and distribution of their social media platforms so as to avoid the risk encouraging extended social media use;
- d. designing their social media platforms to maximize the amount of time users spend on the platform and causing excessive and problematic use of their platforms, particularly among youth, through the use of algorithm-based feeds, social reciprocity, and IVR;
- e. failing to implement adequate safeguards in the design and operation of their platforms to ensure they would not encourage excessive and problematic use of their platforms;
- f. designing and manufacturing their platforms to appeal to minors and young people who lack the same cognitive development as adults and are particularly vulnerable to social rewards like IVR and social reciprocity;
- g. failing to take adequate steps to prevent their platforms from being promoted, distributed, and used by minors under the age of 13;
- h. failing to provide adequate warnings to child and adolescent users or parents who Defendants could reasonably foresee would use their platforms;
- i. failing to disclose to, or warn, Plaintiff, users, and the general public of the negative mental health consequences associated with social media use, especially for children and adolescents;
- j. failing to disclose to Plaintiff, users, and the general public that Defendants' platforms are designed to maximize the time users, particularly youth, spend on Defendants' platforms and cause negative mental health consequences;
- k. representing that Defendants' platforms were safe for child and adolescent users when, in fact, Defendants knew or should have known that the platforms presented acute mental health concerns for young users;

- 1           l.       failing to alert users and the general public, including students at Plaintiff's
- 2               schools of the true risks of using Defendants' platforms;
- 3           m.       advertising, marketing; and recommending Defendants' platforms while
- 4               concealing and failing to disclose or warn of the dangers known by
- 5               Defendants to be associated with, or caused by, youth use of Defendants'
- 6               platforms;
- 7           n.       continuing to design, research, develop, market, supply, promote, advertise,
- 8               operate, and distribute Defendants' platforms with knowledge that
- 9               Defendants' platforms are unreasonably unsafe, addictive, and dangerous to
- 10              youth mental health;
- 11           o.       failing to modify Defendants' algorithms, which are used to recommend
- 12              content to users, in a manner that would no longer prioritize maximizing the
- 13              amount of time users spend on Defendants' platforms over the safety of its
- 14              youth users;
- 15           p.       failing to adequately modify Defendants' algorithm-based recommendations
- 16              to filter out content that expose child and adolescent users to content that is
- 17              violent, sexual, or encourages self-harm, among other types of harmful
- 18              content; and
- 19           q.       committing other failures, acts, and omissions set forth herein.

20           681. Defendants knew or should have known that it was foreseeable that Plaintiff, as the  
 21 primary and sometimes only mental health service provider for many its students, would suffer  
 22 injuries as a result of Defendants' failure to exercise reasonable care in designing, researching,  
 23 developing, testing, marketing, supplying, promoting, advertising, operating, and distributing  
 24 Defendants' platforms, particularly when Defendants' platforms were designed, developed,  
 25 operated and marketed to maximize the time youth spend on Defendants' platforms Plaintiff did  
 26 not know and could not have known the nature and extent of the injuries that could result from the  
 27 intended use of Defendants' social media platforms by Plaintiff's students.

1           682. Defendants' negligence helped to and did produce, and was the proximate cause of,  
2 the injuries, harm, and losses that Plaintiff suffered and will continue to suffer, as detailed above.  
3 Such injuries, harm, and losses would not have happened without Defendants' negligence as  
4 described herein.

5           683. The mental health crisis caused and/or significantly contributed to by Defendants  
6 has caused a major disruptive behavioral situation in Plaintiff's schools, and Plaintiff has had to  
7 take steps to mitigate the harm and disruption caused by Defendants' conduct, including the  
8 following:

- 9           a. hiring additional personnel to address mental, emotional, and social health  
10           issues;
- 11           b. developing additional resources to address mental, emotional, and social  
12           health issues;
- 13           c. increasing training for teachers and staff to identify students exhibiting  
14           symptoms affecting their mental, emotional, and social health;
- 15           d. training teachers, staff, and members of the community about the harms  
16           caused by Defendants' wrongful conduct;
- 17           e. developing lesson plans to teach students about the dangers of using  
18           Defendants' platforms;
- 19           f. educating students about the dangers of using Defendants' platforms;
- 20           g. addressing property damaged as a result of students acting out because of  
21           mental, social, and emotional problems Defendants' conduct is causing;
- 22           h. Increasing disciplinary services and time spent addressing bullying,  
23           harassment,
- 24           i. meeting with students and the parents of students caught using Defendants'  
25           platforms at school or other disciplinary matters related to students' use of  
26           Defendants' platforms;
- 27           j. diverting time and resources from instruction activities to notify parents and  
28           guardians of students' behavioral issues and attendance;

- k. investigating and responding to threats made against Plaintiff's schools and students over social media;
- l. updating its student handbook to address use of Defendants' platforms; and
- m. updating school policies to address use of Defendants' platforms.

684. As a result of Defendants' negligence, Plaintiff suffered harm to their real and personal property along with other economic losses, including the costs associated with past, present, and future efforts to address, pay for and/or eliminate the youth mental health crisis, in an amount to be proven at trial.

**COUNT 3:**  
**Gross Negligence**

685. Plaintiff incorporates by reference all preceding paragraphs.

686. Defendants knew of the substantial risk of harm that their platforms posed to users' mental health, particularly children and adolescents.

687. Defendants' conduct, as described above, was intended to serve their own interests despite having reason to know and consciously disregarding a substantial risk that their conduct might significantly injure the rights of others, including Plaintiff, and/or Defendants consciously pursued a course of conduct knowing that it created a substantial risk of significant harm to others, including Plaintiff. Defendants regularly risk the health of users of their platforms with full knowledge of the significant dangers of their platforms. Defendants consciously decided not to redesign, warn, or inform the unsuspecting public, including Plaintiff's students or Plaintiff.

688. Defendants' gross negligence caused or was a substantial factor in causing foreseeable harm to Plaintiff's real and personal property and other economic losses in an amount to be proven at trial.

689. Defendants' reckless and outrageous indifference to a highly unreasonable risk of harm and conscious indifference to the health, safety, and welfare of others warrants an award of punitive damages.

1 **VI. PRAYER FOR RELIEF**

2 Plaintiff demand judgment against each of the Defendants to the full extent of the law,  
3 including but not limited to:

- 4 1. Entering an Order that the conduct alleged herein constitutes a public nuisance under  
5 Maryland law;
- 6 2. Entering an Order that Defendants are jointly and severally liable;
- 7 3. Entering an Order requiring Defendants to abate the public nuisance described herein  
8 and to deter and/or prevent the resumption of such nuisance;
- 9 4. Enjoining Defendants from engaging in further actions causing or contributing to the  
10 public nuisance as described herein;
- 11 5. Awarding equitable relief to fund prevention education and treatment for excessive and  
12 problematic use of social media;
- 13 6. Awarding actual, compensatory, and punitive damages;
- 14 7. Awarding reasonable attorneys' fees and costs of suit;
- 15 8. Awarding pre-judgment and post-judgment interest; and
- 16 9. Such other and further relief as the Court deems just and proper under the circumstances.

17 **VII. JURY DEMAND**

18 Plaintiff demands a trial by jury on all issues so triable.

19 Dated: June 1, 2023

Respectfully submitted,

21 /s/ Philip C. Federico

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